Address in Medicine

ON

SOME ASPECTS OF INTERNAL SECRETION IN DISEASE.

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MR. PRESIDENT, LADIES, AND GENTLEMEN,—On this occasion it has often been the custom to take a general survey of some branch of medicine and to endeavour to indicate the trend of the teaching of the day and its practical application in some particular direction. In this way an address may serve the useful purpose of reviewing recent progress and also, perhaps, of checking too exuberant hopes which at times are apt to outrun sound judgment. So much that is new is constantly being brought to our notice that it becomes increasingly difficult to estimate its bearing on our daily work. In our anxiety to advance we are in danger of over-estimating the value of what is new and untried at the expense of what is old and well known, whereas we should be—

First to face the truth and last to leave old truths behind.

During the last five and twenty years more and more interest has been taken in the functions and diseases of the ductless glands as their importance has gradually been recognised. Previous to this period, although the structure of these bodies had been described, very little was known as to their functions. Thanks to the efforts of a large number of workers our knowledge of these organs has been largely increased, and the results of their labours have now been brought within the reach of all in the valuable works recently published by Biedl, by Swale Vincent, and by Falta.

It would, I venture to think, be worth while to take a brief survey of a portion of this large field of inquiry and to consider some aspects of internal secretion in disease. It is so easy to speculate as to what may be the function of a ductless gland and so difficult to find out what it really is, that we are apt to fail to distinguish between what has really been ascertained and what is still largely theoretical. This is most unfortunate, as rash speculation on the function of a gland may only lead to erroneous conclusions as to the pathology of its morbid states, and in the end impede rather than accelerate our progress towards the acquisition of reliable methods of treatment. The great importance of bio-chemistry in pathology is now being more fully recognised, and we are gradually learning that many diseases are due to the failure or perversion of normal chemical processes in which the ductless glands play an important part.

THE FUNCTIONS OF THE DUCTLESS GLANDS.

It is essential to have a clear conception of what secretion really is, and to define the difference between external and internal secretion, as the latter term has been used with considerable latitude by some writers. It was pointed out by Johannes Müller in 1844 that secretion consisted of the active formation of a definite chemical substance by an organ for further service in the body, whereas excretion was simply the process of removal from the blood of substances already formed, but of no further use, and therefore to be got rid of as soon and as easily as possible. This hard-and-fast line cannot always be drawn, but it serves as a general means of distinguishing secretion from excretion. Claude Bernard in 1855 first showed that glandular secretions might be either external or internal, according to their mode of exit. An external secretion is one which, like the bile, leaves the gland by a duct and passes out to a free surface. An internal secretion, on the other hand, passes from the gland, either directly or indirectly, into the blood, by which it is conveyed to its destination. Bernard, however, regarded all the products which pass into the blood stream from the organs as internal secretions. We now, however, reserve the name for the useful products of the activity of certain glandular cells which pass into the blood stream in order to play some definite part in metabolism. Thus we do not include the supply of the formed cells by the bone marrow, which, although they form an integral part of the blood, are not themselves a secretion. Nutrient substances which are conveyed by the blood stream, such as albumin from the alimentary canal or sugar formed from hepatic glycogen, are not internal secretions in the strict sense of the term.

The mode of action of the internal secretions is still obscure, but our knowledge of their effects is gradually expanding. Generally speaking, ductless glands act on other tissues at a distance by means of substances, for which Starling has suggested the name hormones, which are conveyed by the blood stream to the cells for which they are destined. The cells of a gland have the property of forming one or possibly more hormones, each of which has the power of exciting a definite form of chemical activity in those cells for which it has a special affinity. It must, however, be remembered that there may be substances formed which, instead of activating, may control or inhibit chemical action. To such bodies the somewhat contradictory term of "inhibitory hormones" has been applied by Biedl. The normal metabolism of the tissues in health is maintained at its proper level by an adequate supply of hormones from all glands which secrete internally. This conception of the mode of action of these glands serves to indicate how complex and variable in composition is that important fluid tissue, the blood, which thus serves as a carrier of so many important bodies. We do not know in what form the hormones are conveyed. They may be in solution or in suspension in the blood plasma, or they may be attached in some way to the red or to the white corpuscles. Whatever the actual method of convection may be, we know that the normal blood carries this out efficiently. We do not know how far this function of the blood may be affected by such changes as occur, for example, in leukæmia and in other diseases which alter its composition.

The function of a ductless gland may be affected by disease in different ways. Progressive atrophy gradually diminishes and finally cuts off the supply of its particular secretion, while some special forms of hypertrophy are accompanied by an increase in the amount of secretion which may or may not be normal in composition. We have thus in the case of each gland to consider the results of changes in both the quantity and the quality of its secretion.

The most important ductless glands are the thyroid, parathyroid, pituitary, and suprarenal glands. Other glands, such as the pancreas, the generative glands, and possibly others, supply both an external and an internal secretion. In these glands, however, we find that the two forms of secretion are supplied by different sets of cells, and that one set may fail while the other continues active in function. Thus in the generative glands spermatogenesis may cease while internal secretion persists.

THE THYROID GLAND.

The effects of disease upon internal secretion can be observed most easily in the case of the thyroid gland, in which the structure is simple and the secretion can be seen stored in the alveoli surrounded by the epithelial cells by which it has been formed. The secretion is stable, and is easily obtained from the healthy gland in an active form as either a liquid extract or a dry powder.

THYROIDAL INSUFFICIENCY.

When this gland atrophies, its secretion gradually fails and the characteristic symptoms of myxœdema slowly develop. The typical symptoms of the malady are so well known that no description is necessary, but it is remarkable that in spite of the striking appearance presented by anyone suffering from this disease, well-marked cases are still to be seen in public places going about apparently unrecognised and untreated. The slight and early forms of the malady may easily be overlooked. In some of these cases the filling up of the lines of the face and the pink flush on the cheeks impart a fictitious appearance of good health which deceives all but the trained observer. In middle-aged women who complain of lassitude, chilliness, and other subjective sensations associated with slight dryness of the skin, some loss of

hair, and a little thickening of the subcutaneous tissues—to mention but a few of the signs of slight thyroidal insufficiency—it is well to remember that a partial atrophy of this gland may be the cause of the symptoms. A course of treatment by thyroid extract will soon be followed by a steady improvement if the diagnosis is correct. In some cases the atrophy appears to become arrested at an early stage and to progress no further for a long period. In one of my cases, in which enlargement and induration of the gland were associated with diminished functional activity, slight symptoms of myxœdema had been present for as long as ten years. In these cases a portion of the gland is still able to produce a small but insufficient supply of secretion. It is possible, though actual proof is still lacking, that in some of these cases the surviving portion of the gland may, after a time by a process of compensatory hypertrophy, be able to supply a sufficient amount of secretion to remove the symptoms. In order to settle this question careful observations continued for a long period are required so as to ascertain if a slight case of myxœdema ever does recover spontaneously, or if after the symptoms have been removed by treatment it is possible for the patient to remain in health when the treatment is stopped. It is to those engaged in general practice that we must look for a solution of this and other similar interesting clinical problems. It is much to be desired that more records of disease as seen from day to day in private practice were available. As an illustration of their value I would refer to the many interesting observations made by Mr. Arthur Maude of Westerham in the cases of Graves's disease in his own practice.

It appears that a considerable amount of destruction of the secreting tissue may take place without producing symptoms, but that beyond a certain point very little further change may induce well-marked symptoms. In a case of ligneous thyroiditis, recently reported by Mr. Southam and myself, the removal of a portion of the diseased gland, in which only the remains of a few glandular alveoli were found on microscopical examination, was quickly followed by the onset of myxœdema. In secondary myxœdema induced by thyroidectomy the symptoms are the same as in the primary form, but naturally the onset is more acute and the symptoms more severe, owing to the sudden and possibly total loss of the secretion. In cretinism we see the dire results of lack of thyroid secretion in childhood, and are able to realise what an important function is carried out by the thyroidal hormones in stimulating normal bodily growth and mental development during the early years of life.

Careful study of the clinical symptoms of myxoedema and cretinism and of the results of total thyroidectomy in man and in animals of different species and at different ages has furnished us with a great deal of information as to what occurs when the supply of thyroidal hormones either partially or entirely fails. Metabolism is diminished and less albumin is required. The interchange of gases is diminished, so that less oxygen is absorbed and less carbon dioxide is given off than in health. The efficiency of the heart is impaired, and in time the myocardium undergoes degenerative changes. The normal growth and activity of the skin with its glands, and of the nails and hair, are notably lessened. In young subjects growth and mental development are retarded or arrested, and no development of the reproductive system takes place at puberty.

In the case of failure of the thyroid gland in man we are able to supply all the necessary hormones in an active state from one of the lower animals, and can regulate the supply to such a nicety that perfectly normal health may be enjoyed for many years by a person whose thyroid gland has entirely disappeared, and who would otherwise, if still living, be existing as a complete invalid in "the gloomy calm of idle vacancy" of advanced myxœdema.

Historical Review.

It may be of historical interest to briefly review the steps by which our present knowledge of the function of the thyroid gland has been attained. Only 40 years ago Sir William Gull gave us the first account of myxœdema under the name of "a cretinoid state supervening in adult life in women," by which he indicated its relationship to sporadic cretinism already described by Hilton Fagge. Four years later W. M. Ord published five cases, in one of which atrophy of the thyroid gland had been found by Professor W. S. Greenfield, and gave the name of myxœdema to the disease. The symptoms which follow total thyroidectomy were described by J. L. Reverdin in 1882 and again in the following year by Professor Kocher, of Berne, as cachexia strumipriva. Soon after this, J. L. and A. Reverdin, recognising the likeness of the condition to myxœdema, suggested the name *myxœdème post-opératoire*. In this country Sir Felix Semon, realising the remarkable clinical similarity between myxœdema and cachexia strumipriva, suggested that both alike were due to loss of function of the thyroid gland. At this point the further investigation of this relationship, important alike to physicians and surgeons, was taken up by a special committee of the Clinical Society of London. The report of this committee will ever serve as a guide to the method in which such investigations should be made. The experimental work of Sir Victor Horsley, together with the clinical and pathological material collected by the committee, clearly demonstrated that cretinism, myxœdema, and cachexia strumipriva are due to loss of the thyroid gland by disease or removal.

The Treatment of Thyroidal Insufficiency.

The foundation of our present method of treatment had even then been laid by Schiff, who had shown that successful transplantation of a thyroid gland in the dog sufficed to prevent the development of the symptoms which usually followed its removal. This observation was confirmed by von Eiselsberg. In 1890 Sir Victor Horsley drew attention to these important experiments, and suggested that thyroid grafting should be tried as a means of arresting the progress of myxœdema. The adoption of this suggestion was followed by remarkable diminution in the symptoms. Owing, however, to the failure of the graft the improvement was temporary. In Bettencourt and Serrano's case the improvement began the day after the operation, and, as they pointed out, was due to the immediate absorption of the contents of the grafted gland. These observations led me to the conclusion that good results would be obtained by the continued internal administration of the secretion in the form of an extract of the gland. In order to test this I dissected out the thyroid gland of a sheep as soon as it was killed, and prepared the glycerine extract, which is now official under the name liquor thyroidei. This was periodically injected beneath the skin of a patient, who fortunately was willing to allow the experiment to be tried. It is now just 22 years since the successful result of that treatment was communicated to the annual meeting of this Association held at Bournemouth in 1891. Although the hypodermic method of administration served its purpose in demonstrating the efficiency of the remedy and conclusively proved that the function of the thyroid gland was to supply an internal secretion, in actual practice it had many drawbacks, which fortunately were removed the following year, when Dr. Hector Mackenzie and Dr. E. L. Fox in this country and Howitz in Copenhagen showed that the extract was equally active when given by the mouth.

It may be mentioned that this first case of myxœdema treated by thyroid extract is still alive and well, a condition of health being maintained by a dose of ten minims of liquid thyroid extract each week day, or 6½ oz. in the course of the year. Less than a gallon of thyroid extract in all has therefore maintained her in health for 22 years. No variation of the dose has been found necessary. In some cases the best results can only be obtained by adjusting the dose from time to time according to the physiological requirements in a manner which some patients learn to do accurately for themselves. So complete is the recovery that, provided the climacteric period has not been reached, the functional activity of even the reproductive system may be completely restored. For example, I recently saw a woman aged 50, in whom myxœdema had developed 11 years before. Recovery took place under treatment, and 4½ years later she bore a healthy child after a normal pregnancy. The whole function of the thyroid gland can therefore be carried out in man by a constant and adequate supply of thyroidal hormones obtained from one of the lower animals in the form of thyroid extract for any required length of time after the natural supply has failed owing to destructive disease of the gland.

The treatment of cretinism is more difficult, as the dosage

of the extract requires a nice adjustment to the varying physiological requirements of childhood in order to secure the best results. When treatment is started early in life and is carefully regulated, all the signs of cretinism may disappear and the child develop both mentally and physically in a normal manner. One such successful result is in the case of the daughter of a medical friend, where the dosage has been most carefully regulated, almost from day to day, by slight signs which have been found to indicate when larger or smaller doses are required. In many cases, however, mental development is slow, while bodily growth is rapid. It appears to be specially desirable that in countries where cretinism is endemic adequate continuous treatment should be supplied by the State for all cases from the earliest age onwards.

The Use of Thyroid Extract in Various Conditions.

Thyroid extract naturally finds its fullest opportunity in this supplemental treatment of the various forms of thyroidal insufficiency. Owing to its physiological property of stimulating metabolism and to the iodine it contains, the extract has also been found useful in conditions in which there is no definite evidence that the normal supply of hormones is deficient. The marked emaciation caused by excessive secretion in exophthalmic goitre indicates its employment in obesity, and in some cases good results are obtained, especially if a suitable diet is adopted at the same time. Good results have also been recorded in the treatment of rickets, rheumatoid arthritis, and nocturnal enuresis. The rapid improvement which takes place in the condition of the skin of cases of myxœdema during treatment induced Dr. Byrom Bramwell to employ the extract with conspicuous success in the treatment of psoriasis and other cutaneous diseases. Sir Malcolm Morris has recently dealt fully with the relationships of the internal secretions to dermatology, and has shown how important a part is played by the glandular extracts in the modern treatment of diseases of the skin.

HYPERACTIVITY OF THE THYROID GLAND.

Not only may disease be due to failure of glandular secretion, but it may be the result of the opposite condition of abnormal activity. The secretory activity does not necessarily depend on the size of the gland. Very great enlargement of the thyroid gland may take place in some forms of goitre without any excess of secretion passing into the blood, whereas in Graves's disease a slight increase in size may be accompanied by symptoms of active hypersecretion. Slight enlargement may take place in response to special physiological requirements; thus the pituitary gland enlarges during pregnancy, and the thyroid gland at puberty and during menstruation. This physiological enlargement of the thyroid during adolescence may, however, become pathological in the form of a simple parenchymatous goitre. In the early stages this will subside when the demand for more than the usual supply of hormones is made good in the form of suitable doses of thyroid extract by the mouth. Before undertaking this treatment in these cases it is of great importance to make sure that no symptoms of hyperthyroidism are present, or a mild incipient case of Graves's disease may unwittingly be aggravated. The results of hyperactivity of the thyroid gland are seen in the various grades of exophthalmic goitre. We are still anxiously seeking for an explanation of the development of this morbid activity, which comes on sometimes rapidly, sometimes slowly, persisting, it may be, for a few months only, or continuing unabated for years. If we knew what causes the characteristic change in the thyroid gland in consequence of which it pours such a flood of secretion into the circulation, we should be in a much better position to treat the disease in a rational manner.

Exophthalmic Goitre.

As is well known, the symptoms of Graves's disease are the reverse of those of myxœdema; the organs and functions which in myxœdema are sluggish and inert, for want of the normal hormones, in Graves's disease are worked at high pressure owing to their excessive supply, and the symptoms of the disease are but the outward expression of this glandular hyperactivity. The respiratory interchange of gases is increased by 50 per cent. Magnus Levy has estimated that the amount of oxygen absorbed may even be increased by as much as 70 or 80 per cent. The increased caloric production is compensated for by heat regulation, so that the rise of temperature in Graves's disease is only slight. Sugar toleration is reduced and glycosuria may occur. The relationship of Graves's disease to diabetes will, however, be referred to again later. There are some interesting results of this increased metabolic activity which are appreciated by patients themselves and may serve as a guide to treatment in some cases. Those who have been previously liable to chilblains lose them entirely during an attack of Graves's disease; they also acquire for the time being an almost complete immunity to ordinary colds, so much so that a return of a liability to chilblains or to ordinary colds is often an indication that the hyperactivity of the thyroid is diminishing and that the patient is improving.

Another interesting point is the relationship between Graves's disease and tuberculosis. Speaking from personal experience only, I have found that pulmonary tuberculosis rarely occurs in uncomplicated cases of exophthalmic goitre, and when it does it is usually limited in extent and activity. I say uncomplicated because in two interesting examples of pluriglandular hypersecretion, to which further reference will be made, pulmonary tuberculosis was present. The following experience also lends support to the view that a condition of hyperthyroidism has some influence on tuberculous infections. In a severe case of Graves's disease, in which only physical signs of bronchitis could be discovered, tubercle bacilli were found in the sputum. It was, for reasons I need not now detail, decided that a portion of the thyroid gland should be removed; this was successfully carried out by Dr. Mamourian, with whom I saw the patient. For a fortnight all went well; at the end of that period the tuberculosis became active, and the patient died a month after the operation from acute tuberculosis of the lungs. This experience shows that in these uncommon cases thyroidectomy should not be undertaken. This apparent resistance to infection is probably due to the increased activity of the metabolism of the tissues rather than to any direct action of the thyroid secretion, for tubercle bacilli can actually grow in the thyroid gland itself, as is shown by the presence of miliary tubercles and of caseous tuberculous nodules in it in some cases of tuberculosis.

The Crises occurring in Graves's Disease.

One remarkable feature of the clinical course of Graves's disease is the variability of the symptoms, which in its most marked form is evidenced by the occurrence of crises. We see in some cases general crises of acute thyroidism—that is to say, periods during which almost all the symptoms are aggravated for the time being. The pulse is greatly increased in frequency up to 200 or more per minute; there are great nervous agitation and restlessness, increased tremor, sweating, vomiting, and diarrhœa. These attacks are alarming and dangerous, and in some cases prove fatal within a few days. These general crises are evidently due to a sudden increase in the activity of the thyroid, resulting in the discharge of a larger amount of secretion into the blood stream.

Still more interesting is the occurrence of local crises during which, perhaps, a single symptom becomes greatly increased, or one organ or system alone is suddenly thrown into a state of extraordinary activity. Thus some patients are liable to cardiac crises, during which, for no apparent reason and even when resting in bed, the pulse-rate suddenly increases from 120 to 200 or more per minute. This may last for some hours, or may subside more rapidly after the application of an ice-bag to the præcordium. In other cases we see cutaneous, bronchial, gastric, or intestinal crises, characterised by profuse sweating, bronchorrhœa, vomiting, or diarrhœa, as the case may be. The occurrence of these localised forms of hyperactivity suggests that possibly thyroid secretion is polyvalent, and contains different hormones which are capable of activating different organs. One may activate the sweat glands and hair follicles, another the heart, another the bronchial mucous membrane, and so on. In Graves's disease it would appear that there is possibly not only an increase in the amount of thyroidal secretion formed and absorbed, but that in some cases the proportion between the different ingredients of the secretion may vary in different cases and at different times in the same case. A sudden temporary increase in the substance which activates the skin, for example, would account for a

cutaneous crisis, whereas a general crisis would be caused by an increase in the secretion as a whole.

Action of Thyroidal Hormones on the Heart.

We are specially in want of further information as to the mode of action of the thyroidal hormones on the heart. The disastrous result of their excessive action is only too apparent in the dilated and degenerated hearts of some advanced cases of Graves's disease in which death occurs from some sudden cardiac failure. In some mild cases of hyperthyroidism the cardiac symptoms are the most striking, and have given rise to the term "goitre-heart." Under this name, however, two separate conditions have been included. One variety is thyrotoxic in origin and is due to excessive thyroidal secretion, the effects of which are shown chiefly by enlargement of the left side of the heart. The other variety is mechanical in origin, and attention appears to have been drawn to it first by Rose, of Zürich, in 1877. This form of goitre-heart is due to the tracheal stenosis caused by a goitre. It is the result of the prolonged dyspnœa and results in enlargement chiefly on the right side of the heart. It has been shown experimentally by H. Ströpel that tracheal stenosis experimentally produced in cats causes an enlargement of the heart. It is this latter form of goitre-heart which is a source of danger in operations on cases of goitre with prolonged tracheal stenosis. In certain cases the two forms are probably combined, as it is quite possible to have a goitre which both compresses the trachea and also over-secretes. Fortunately, in the great majority of cases of Graves's disease there is no compression of the trachea.

We do not know in what manner the thyroidal hormones produce the rapid rhythm of the heart which is so constant a symptom in Graves's disease. We can produce the tachycardia in a healthy subject by giving large doses of thyroid extract, which, however, does not appear to influence the ventricular rhythm directly. I have recently had under my care in the Manchester Royal Infirmary a case of complete heart-block in which polygraph tracings showed that while the auricles were beating 68 times a minute, the ventricles had an independent rhythm of 28. The radial pulse only varied between 21 and 28 during the whole time he was in the hospital. In this case the continued administration of three 5-grain thyroid tabloids a day did not produce any acceleration of either the auricular or the ventricular rhythm. Dr. James Mackenzie has, however, found that other conditions which usually accelerate the pulse in health, such as excitement or alcohol, have scarcely any effect upon the ventricle in cases of heart-block. I have not come across any record of a case of heart-block in a patient suffering from Graves's disease. Such a combination, if it ever occurs, would be of great interest.

The Treatment of Graves's Disease.

The considerable number of cases of Graves's disease in which partial or complete recovery takes place shows that the diseased gland is capable of returning to a normal state of activity, but we have still to ascertain precisely under what conditions this favourable result is obtained. General hygienic, medicinal, and electrical treatment is followed by gradual improvement and recovery in many cases, but we much require some more rapid means of treatment. The application of suitable doses of X rays to the enlarged thyroid gland has in some of my cases proved to be of great value. The gland gradually diminishes in size, and the other symptoms subside. Atrophic changes in the secretory epithelium and both interstitial and extra-capsular fibrosis appear to be induced by the action of the rays. These adhesions between the capsule and the surrounding structures are, however, a disadvantage should a subsequent thyroidectomy be required. In two of my cases in which X ray treatment was not successful one lobe of the gland was excised. Microscopical examination showed no fresh change in one, but a distinct increase in the inter-alveolar connective tissue of the other. These changes are slow in development, so that the full effect of the treatment is not obtained until some months have elapsed. In favourable cases some 15 to 20 weekly doses of the rays have been sufficient to bring about great improvement or practical recovery, but in others only slight improvement has followed a similar course of treatment. It is worth while to persevere with X ray treatment for as long as a year if slow but satisfactory progress is being made. We have, however, still much to learn as to the most appropriate dosage and mode of application of this valuable method of treatment.

The late Dr. Gibson, whose early death we so greatly deplore, in his eloquent address last year described the remarkable improvement he had observed after the employment of suprarenal extract, which he considered "to have no rival in the management of this affection." Useful as this remedy is in some cases, my experience of its use has unfortunately not been so favourable as his. The use of a special cytotoxic serum which would induce an atrophy of the thyroid gland has not been satisfactory. Unfortunately, a cytotoxic serum is not altogether selective in action, and induces changes in the cells in other organs as well as in the thyroid gland itself. Thyroidectin, though useful in some cases, is not constant in its effects. Rodagen is of doubtful utility, though the fresh milk of a thyroidless goat is useful in some cases, but it may be difficult to obtain one of these goats, and there is the trouble of maintaining the animal during the treatment. The results of surgical treatment in selected cases are satisfactory, but it is to be remembered that there are still considerable risks to be faced, and that recovery does not follow in all cases. I recently saw a lady who has had exophthalmic goitre for ten years; she has, on different occasions, had the whole of the right and a portion of the left lobe of the thyroid removed. The symptoms of the disease are still, however, moderately severe. The crises call for special treatment as they arise. The cutaneous and bronchial crises are generally controlled by belladonna in full doses, and the gastric and intestinal crises by opium. In some cases, however, the vomiting continues until death takes place from exhaustion. In one case in which the vomiting continued in spite of all we tried, and until the condition appeared to be almost hopeless, Dr. Pemberton, with whom I saw the patient, finally tried injections of pituitary gland extract. This at once checked the vomiting, which after several injections ceased altogether, and the patient returned to his former condition of Graves's disease of a mild type.

THE PARATHYROID GLANDS.

The true function of the parathyroid glands and their relationship to the thyroid itself have attracted much attention. On the one side it is held that they really consist of undeveloped thyroid tissue capable of becoming functionally active under certain circumstances; on the other they are regarded as separate organs with a special relationship to the nervous system, which is shown by the development of tetany when they are removed. We know little if anything of the results of disease of these organs in man, and the experimental investigation of their functions is complicated by the variable anatomical distribution found in different species of animals. On the whole, their importance appears to have been somewhat over-estimated, but further investigation is required in order to ascertain their real function in man.

THE PITUITARY GLAND.

The pituitary, like the thyroid gland, has a remarkable influence upon metabolism, and the rapid growth and development which normally take place at adolescence are largely due to its activity. Cushing's experiments show that after removal of the hypophysis in adult dogs there are deposition of fat, increased sugar tolerance, lowering of temperature, and abeyance of sexual functions. In puppies there is, in addition, arrest of sexual development and of skeletal growth. In man the effects of pituitary insufficiency are shown in the condition described by Fröhlich and named by Bartels dystrophia adiposogenitalis. This condition may develop either as the result of destructive disease of the hypophysis or in consequence of injury, as in Madelung's case of bullet wound of the pituitary gland. There is a remarkable increase in the amount of fat associated with high carbohydrate tolerance, dryness of the skin, impaired nutrition of the hair and nails, and arrested development of the genital organs. It appears, therefore, that hormones supplied by the anterior lobe of the hypophysis activate skeletal growth and sexual development at puberty, control the accumulation of fat, and the nutrition of the skin and its appendages.

Sir E. A. Schäfer has shown that the posterior lobe, including the pars intermedia, supplies hormones which regulate the tone and contractility of plain muscular tissue generally and of the heart, and stimulate the activity of the

mammary gland and of the kidney. It seems possible that the secretion is polyvalent, and that these various effects are produced by the action of different hormones, as Herring obtained a pituitary hormone from the skate which stimulated the mammary gland without influencing either the circulatory system or the kidney. In addition to these important results, Sir E. A. Schäfer's experiments have placed pituitrin, a very powerful remedy, in our hands, by means of which we can stimulate plain muscular tissue to contract. It is not unreasonable to expect that it may be found possible to separate the hormones which stimulate glandular secretion from those which act upon the unstriped muscle and so further increase their range of usefulness in the treatment of disease.

Acromegaly.

Not only may disease be due to lack of pituitary hormones, but a remarkable change in the body arises when the supply of these hormones is superabundant. When this occurs in the adult the hypersecretion leads to the characteristic changes of acromegaly. In young subjects the long bones are still able to increase in length, and so a condition of gigantism is the result, and lowered sugar tolerance with glycosuria in some cases.

Just as Graves's disease may be followed by myxœdema, so in the later stages of acromegaly the pituitary secretion may fail and some of the symptoms of insufficiency appear, such as obesity, somnolence, and increased sugar tolerance. The skeletal changes are, however, permanent, and the bones do not return to their normal size and shape when the period of hypersecretion is over. It is interesting, in comparing the functions of the thyroid and pituitary glands, to find that loss of function in the young causes arrest of development in both cases, while hyperactivity causes overgrowth in the case of the pituitary gland alone, for Graves's disease in the child does not cause overgrowth, as might have been expected when we remember the rapid growth of a cretin under the influence of thyroid extract. In the active stage of acromegaly we can expect no benefit from the use of pituitary extract, though thyroid extract has proved to be of service in some cases. The means at our disposal at present for diminishing the overactivity of the hypophysis are the use of X rays and surgical measures for the relief of local pressure symptoms by decompression or the removal of some of the enlarged anterior lobe of the gland, so as to diminish the supply of its secretion. Owing to the deeply seated position of the hypophysis the actual dose of X rays which can reach it must be small. The chief benefit obtained by surgical measures has been the relief of symptoms such as headache and improvement of vision resulting from the diminution of local pressure thus brought about, and is comparable to that obtained by the removal of a portion of a goitre which is compressing the trachea.

THE INTERRELATIONSHIPS OF THE DUCTLESS GLANDS.

It is now fully recognised that the ductless glands have important relationships to each other, and that the secretion of one gland may either stimulate or inhibit the activity of other glands. Of these structures it may, indeed, be truly said, "whether one member suffereth all the members suffer with it." My attention was particularly drawn to this aspect of the subject by observing two cases, which I recorded some 17 years ago, in which acromegaly, Graves's disease, diabetes, and pulmonary tuberculosis were present simultaneously. In one of these subsequently there was found to be a considerable hypertrophy of the hypophysis, enlargement of the thyroid gland, and persistence of the thymus with hypertrophy of the left lobe. At the time I was inclined to regard the hypertrophy of the thyroid and hypophysis as being due to a common cause. Rolleston has suggested that the condition is due to some disturbance of an equilibrium between the internal secretions of the two glands. In myxœdema and after removal of the thyroid gland the hypophysis increases in size and vesicles develop which are filled with secretion. This change appears to indicate that the hypophysis may to a limited extent be able to replace the thyroid gland, although it contains no iodine. The simultaneous enlargement of the two glands is difficult to explain. It is probably due, as Cushing suggests, to an "underlying biochemical factor" of which at present we know nothing. The existence of a relationship between the hypophysis and the sexual glands is shown by the enlargement of the former, which takes place during pregnancy and after castration.

These cases illustrate also the relationship between the thyroid and the pancreas. Glycosuria occurs not only, however, in these cases of pluriglandular disease, but also in cases of Graves's disease, in which there may be an occasional and transitory glycosuria or a severe and fatal diabetes. The diabetes may develop while the symptoms of Graves's disease are still active, or it may only appear later on after they have disappeared. It has been shown by Eppinger, Falta, and Rüdinger that the thyroid and pancreas tend to inhibit each other, so that increase of activity in one is accompanied by a diminution in the other. This influence is probably exerted by the thyroid secretion on the activity of the islands of Langerhans, so that in exophthalmic goitre sugar tolerance is lowered, while in myxœdema it is raised. Lorand found an increase in the islands of Langerhans in dogs after thyroidectomy, whereas the glycosuria induced by removal of the pancreas almost or entirely disappeared after a subsequent thyroidectomy. In one of my cases in which recovery from Graves's disease was followed by severe and fatal diabetes, microscopical examination of the pancreas showed that the islands of Langerhans had practically disappeared. It seems, therefore, that in these cases the prolonged inhibitory action of excessive thyroid secretion may be followed by loss of the internal secretion of the pancreas. We unfortunately know very little of the pancreatic hormones. So far they have not been obtained in an active form, for no preparation of the pancreas has yet been produced which is able to supply the hormones by internal administration when they are absent in a case of pancreatic diabetes. The experiments of J. Forschbach indicate that where a state of "parabiosis" has been established between two animals as by means of a direct communication between the peritoneal cavities, the onset of diabetes after the removal of the pancreas from one animal may largely be prevented by the direct passage of active pancreatic hormones from the other.

The gap to be bridged to enable us to make use of our present knowledge of the function of the pancreas in the treatment of some forms of diabetes thus appears to be a narrow one. Could we but transfer the normal pacreatic hormones directly without change from a healthy animal into the blood stream of a case of pancreatic diabetes, striking therapeutic effects might reasonably be expected. Forschbach and Zuelzer have shown that although the glycosuria in man may be diminished by injection of pancreatic extract prepared by a special method, such unpleasant symptoms are produced that, as yet, the treatment cannot be carried out.

THE SUPRARENAL GLANDS.

In the suprarenal glands the medulla and cortex have separate functions. The medulla is characterised by the presence of a chromaffin substance and is constantly supplying an active hormone, adrenalin. It was shown by Oliver and Schäfer that this substance has a remarkable power of raising blood pressure. So active is this hormone that 1/1000 mgm. per kilogramme of body weight suffices to produce a definite rise of pressure. It has further been shown by Langley and by Elliott that adrenalin stimulates the whole of the sympathetic system by its action on the myoneural junction. Failure of the suprarenal glands is the immediate cause of Addison's disease, in which there are increased pigmentation of the skin, vomiting, and great prostration, with lowered blood pressure. Though the suprarenal insufficiency is most commonly due to tuberculosis of the glands, Rolleston has shown that other destructive lesions, such as simple atrophy, produce the same result. We know little of the functions of the suprarenal cortex, but it seems not improbable that while the low blood pressure and prostration in Addison's disease are due to loss of adrenalin from destruction of the medulla, the bronzing of the skin is due to loss of the cortex. In adrenalin we possess a remedy the value of which is fully recognised as a hæmostatic and in the treatment of asthma and other conditions. Something more than this, however, is lacking in Addison's disease, as, unfortunately, neither adrenalin nor extracts of the whole suprarenal gland are able to replace the diseased gland in this malady. Either the disease is due to something more than the loss of an internal secretion, or the secretion, in addition to adrenalin, contains other hormones which we are as yet unable to obtain in an active condition for

therapeutic purposes. So far no decided results have been obtained in the treatment of Addison's disease by any form of suprarenal extract, nor is there any evidence that life can be prolonged by their use.

Excessive action of the suprarenal medulla may occur, but we have no certain information as to its clinical results. There is reason to think that an excess of the cortical hormones in early life may exert a marked influence upon the development of the reproductive system and of secondary sexual characters. In the remarkable cases of premature sexual development in boys from 3 to 9 years of age collected by Bulloch and by E. E. Glynn adrenal hypernephromata have been found. In these cases the genital organs attain their full size, the hair grows on the face and other parts of the body, and the voice becomes deep. It seems not unlikely that this premature development, years before the proper time, is due to excessive secretion of hormones by the adrenal cortex.

THE GENERATIVE GLANDS.

It has long been known that the generative glands exercise a dual function, and that their removal not only induces sterility but other remarkable effects as well. Castration in early life prevents the development of secondary sexual characters; thus the antlers do not develop in stags which have been castrated when quite young. The earliest proof that such arrest of sexual development is due to loss of an internal secretion was given by A. A. Berthold, of Göttingen, in 1849, who showed that in cocks after transplantation of the testicle the male characters were retained, and attributed this result to the effect which the organ had upon the blood. Biedl further points out that these experiments were really the first to prove the existence of any internal secretion in the body. Spermatogenesis and internal secretion, the two functions of the testicle, can be separated experimentally, as the internal secretion is in all probability furnished separately by the interstitial cells of Leydig. While ligature of the spermatic cord produces the same result as castration, ligature of the vasa deferentia entails sterility alone. It has been shown by Shattock and Seligmann that the latter operation in sheep does not prevent the full development of secondary male characters, as the vascular supply remains intact and the normal amount of testicular hormone reaches the general circulation. Similar effects are produced by X rays, which induce sterility without arresting internal secretion, as they spare the cells of Leydig.

There is a close relationship between the functions of the generative gland in both sexes and other ductless glands. The absence of sexual development at puberty in cretins and in cases of pituitary insufficiency clearly indicates that both the thyroid and pituitary glands normally exert a powerful influence on the development of both testicle and ovary. This relationship is still further illustrated by the remarkable development of these glands which takes place under the influence of thyroid extract in an adult cretin, who has long passed the normal age of puberty. I have recorded the case of a female cretin who at the age of 28 was only 34½ inches high, in which scanty menstruation had only occurred a few times, and the mammary glands were quite undeveloped. Under thyroid treatment she grew 4 inches in 3½ years, menstruation became regular and abundant, and the breasts and nipples became remarkably well developed. In these cases it is probable that the thyroid extract activates the latent ovary, and that the ovarian hormones thus produced stimulate the growth of the mamma, as they do normally at puberty. The association of premature sexual development with adrenal hypernephroma has already been mentioned, and similar cases have been recorded in association with enlargement of the hypophysis and of the pineal gland.

The results of loss of the secretion of the ovaries are seen after their removal by operation and at the normal climacterium. The symptoms which then occur are variable in character, but hot flushes, irregular perspiration, morbid fears of organic disease, and various subjective sensations are common. It is rather remarkable that so little attention is devoted to their consideration in our medical text-books, and that their true nature is apt to be overlooked. A difficulty in recognising the cause of these symptoms may arise in those not uncommon cases in which they develop at an interval, sometimes of several years, after the cessation of menstruation. My colleague, Dr. W. E. Fothergill, has suggested as an explanation of this separation that the involution of the uterus precedes the atrophy of the ovary by an interval during which the latter secretes normally, and that it is only when the ovarian secretion finally fails that the characteristic symptoms appear.

CONCLUSION.

This brief survey of some of the results which follow any abnormal ebb and flow of the internal secretions in disease indicates how important are the functions of the ductless glands. As yet we are only able to recognise with certainty the maladies which are due to well-marked changes in the structure and function of these organs. It is probable that some less definite forms of ill-health may also be due to variations in the activity of one or more glands, the significance of which we shall be better able to appreciate when our knowledge of their functions becomes more exact.

What, however, we most desire is to find satisfactory means by which we can supplement deficient secretion on the one hand and control harmful overactivity on the other. We have seen how far these objects have been attained in some cases. It is dangerous to attempt to forecast future possibilities, but it is not unreasonable to hope that in the light of further knowledge it may be possible to adequately supplement suprarenal insufficiency and so relieve the symptoms of Addison's disease. The treatment of Graves's disease and acromegaly will become more satisfactory as we acquire more adequate methods of checking the abnormal flow of secretion, when it is to be hoped that surgical measures will become unnecessary. Pancreatic diabetes may also prove to be more amenable to treatment by methods at present beyond our reach. Clinical medicine has already gained enormously from results obtained by experimental pathology, and we may look to the future with confidence for still further advances which will place more simple and efficient methods of treatment within our reach.

Address in Surgery

ON

THE GIFTS OF SURGERY TO MEDICINE.

Delivered at the Eighty-first Annual Meeting of the British Medical Association

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MR. PRESIDENT, LADIES, AND GENTLEMEN,—The choice of the title for the address which I have the high honour to deliver must not lightly be held to indicate that I admit any difference between the essentials of medicine and surgery. The two sciences or arts are not in the remotest particular antagonistic; rather is it true to say that they are indeed one and indivisible, and that the separation between the two aspects which are presented to us is due to the limitations of the human intellect alone. It has been too long the custom for surgery to be divorced from medicine, for the problems of mind and of hand to be considered as distinct from one another. Happily, owing to the work which has been done in recent years, opportunities have abundantly been afforded for demonstrating the power of surgical research to enlarge the scope and to enrich the knowledge of many of the problems of internal medicine. By a study of what I have ventured to call the "pathology of the living" a very profound change has by degrees crept over our knowledge of almost every form of chronic abdominal disorder.

POST-MORTEM ROOM STATISTICS.

In the earlier years of the nineteenth century an acquaintance with the morbid processes attacking internal organs was based upon two sources of information only—upon an inquiry into the details of the clinical history of any disease as it developed, waned, or progressed, and upon the examination of the parts involved after the death of the sufferer.

I have endeavoured to show, on more than one occasion, how impossible it is to measure the sufferings of patients during their lives, or to assess their chances of death from any disease, by a consideration of the statistics gathered from the post-mortem room experience. People do not die

in hospital from the chronic diseases from which they suffer during life. It is, so far as the surgical side is concerned, the acute terminal infections, malignant disease in all its forms, especially those lending themselves to surgical consideration, and the accidents of civil life, that supply the bulk of the material upon which the pathologist makes his observations. The statistics of Brinton and Welch, for example, two of the very ablest men ever engaged in medical work, upon gastric ulcer—statistics that meet one at every turn of the page in the literature of this subject—are, in my view, almost without value. For the observations were not made entirely by themselves alone, but by a number of observers of differing capacity working in distant places under diverse conditions. There could be, therefore, no common denominator; there was nothing by which the values of recorded figures could be made equal. And it would be futile to suppose that the patients who suffer from duodenal or gastric ulcer during life are adequately represented, in point of number, by those who die from these conditions in the wards of a hospital, or by those in whose bodies the traces of old, and perhaps quite inconspicuous, scarring or ulceration are discovered. We shall not, I hope, hear much in the future of post-mortem statistics as the guides or dictators of our opinions as to the maladies of the living.

THE SURGEON'S POSSIBILITIES OF DIAGNOSIS IN THE LIVING.

When the great gift of America to humanity—the discovery of the anæsthetic power of ether—was brought to the aid of the operator, vast possibilities were at once apparent in the range of the surgeon's work. But the dread of infection—indeed, the certainty of infection—held his hand for more than a generation, till the work of the greatest man our profession has ever produced, Lister, made the dream of the surgeon come true, made it possible for him with safety to carry through many procedures which before had been impossible. More than this, the chance was given to undertake the treatment of diseases which had formerly run their hasty or lingering course unchecked. Little by little our scope then widened. Acute conditions were at first attacked, perforations of the hollow viscera, gangrene of the appendix, hæmorrhages from the bursting of a tubal gestation, and so forth. By degrees the impression grew that such acute catastrophes were but final stages, terminal events in the history of diseases whose presence and course were betrayed by symptoms which were clear and often characteristic. When these conditions were approached surgically in their earlier and more quiescent periods the results of operations were at first not very satisfactory. Crude methods and imperfect technique left legacies of trouble behind them. The mortality was high, and remote results were rarely ideal.

It is interesting now to recall the clumsy manifestations which attended such operations as cholecystostomy or gastro-enterostomy in the days of their infancy. Owing to the labours of Senn and of Murphy simpler methods began to find a place. The bone-plates and the button showed how little was really necessary to secure firm and permanent union between well-clad peritoneal surfaces. Though these instruments are now discarded entirely, to all of us the lessons learnt from them were most important and most necessary. But for them we should never have realised as we do to-day how speedily and how simply those manipulations can be carried through with precision which before had occupied two or three hours and had involved the separate introduction of 200 or 300 stitches. In surgery complexity of procedure indicates defect in method. The search in all our work is for the simple way. In surgery, as in other arts, simplicity is the supreme virtue. Our unceasing efforts in technique are to discover what may safely be left out.

THE ASSOCIATION OF ABDOMINAL DISEASES POINTING TO A COMMON CAUSE.

As we began to recognise, almost unconsciously, the ease and sufficiency of the simple mode, the mortality from all operations fell rapidly. So it became a safe and customary procedure, not only to deal with the particular lesion which had demanded attention, but also to investigate the conditions of adjacent organs. And there surprising dev lopments awaited the inquirer and rewarded his eager search. Conditions other than those which needed immediate attention were found to exist with no little frequency. In diseases of the stomach or duodenum the gall-bladder was found not seldom implicated also; in diseases of the latter, as of the former, the vermiform appendix seemed often to play the part of an infecting agent. And so by slow degrees the conviction was borne in upon us that these diseases I have named did not stand in rigid isolation, one separate entirely from the other, but that their association was so frequent as to indicate the strong probability of some underlying primary cause. Infection, it was soon asserted, whether carried by the blood stream, by the lymphatics, or ascending, as Bond has shown with great clearness, along the mucous canals, was the prime evil. Differences of opinion were soon declared, and still continue, as to the source of the infection. To many of us the quiescent inflammatory lesions of the appendix seem the most potent and the most persistent of all. Arbuthnot Lane, as I shall presently state more fully, holds firmly to the belief that the infections for the diseases I have named, as of many others, have their origin in the intestine, large or small. And his views are sustained by him with quiet and characteristic courage, and with a record of results that compel attention even from the most sceptical.

A DEBT OF SURGERY.

To the surgical assault that we made upon our patients for the purposes of this study of the "pathology of the living" there was one serious objection. After all abdominal operations some pain was felt. Not very much in the ordinary appendix cases, a little more perhaps in the gastric cases, and certainly more in the patients who had submitted to operations upon the biliary tract. The pain was rarely very severe, but it called often for the administration of a small dose of morphine, and it was certainly enough to constitute a blemish upon our artistry. Further than this, it was noticed that after an operation involving a handling of the parietal peritoneum, even so slight a manipulation as the separation and ligature of a hernial sac, the patient complained of flatulence, which, in the more severe cases of abdominal exploration and handling, was severe and most distressing. It had long appeared quite certain to me that the condition described by the patient as "flatulence," the "gas pains" of the American surgeon, had really little or nothing to do with gaseous distension of the intestines. There was a feeling of "fullness" to the patient; but often no recognisable inflation of the intestines when an examination was made, nor was any real relief obtained by the expulsion of gas. Flatulence, I felt convinced, was the name given to a condition which depended upon trauma, or the rough handling of the parts engaged in the operation. Happily we are now able to make certain that any operative procedure in the abdomen can be carried out thoroughly without the infliction upon the patient of any intolerable pain and without his being caused to suffer any flatulent distress afterwards. We owe this entirely to Crile. The debt of surgery to this most acute, most versatile, and patient investigator was already a heavy one, but I think that to the surgeon of tender heart—and all surgeons surely are tender-hearted—his latest work must bring the most profound satisfaction.

ANOCI-ASSOCIATION.

Crile has enunciated the principle of "anoci-association." He has shown that in the condition recognised as "shock" definite and demonstrable changes occur in the cells of the brain, which have discharged all the energy they had stored. This exhausting discharge of nervous energy is due to that excitation which is caused by the infliction of numberless injuries, each of them small, or to the infliction of one overwhelming impression. When an operation is performed under ether anæsthesia, the operator may delude himself into the belief that because his patient lies unconscious, and apparently unresponsive to any hurt, therefore no damage to his nerve centres is possible. But ether anæsthesia does not put all the brain to sleep; the larger part, and by far the more important part, is awake and staring, ready to be acted upon, and to be injured, just as easily as if the patient were awake. The fact that some operators produce little constitutional disturbance, little shock, by the performance of an operation which at the hands of another causes very serious collapse, is not due to differences in the patient, in the anæsthetist, in the method, or in anything else but the surgeon himself. There are

surgeons who operate upon the "canine" principle of savage attack, and the biting and the tearing of tissues are terrible to witness. These are they who operate with one eye upon the clock, and who judge of the beauty of any procedure by the fewness of the minutes which it has taken to complete. There are other surgeons who believe in the "light hand," who use the utmost gentleness, and who deal lovingly with every tissue that they touch. The former type of operator is described by Crile as "carnivorous"; the latter type is nowhere better exhibited than in his own work. The scalpel is, indeed, an instrument of most precious use—in some hands a royal sceptre; in others but a rude mattock. The perfect surgeon must have the "heart of a lion and the hand of a lady"; never the claws of a lion and the heart of a sheep.

The brain, then, under ether anæsthesia is in great part wide awake, appreciative of stimuli, and in part responsive to them. During any surgical operation, Crile assures us, there is, in reply to every incision, every pull of the retractors, indeed to every physical contact, a change in the pulse, the respiration, and the blood pressure. Every surgeon conversant with abdominal work knows how a rough handling will cause tension in the muscles and deepen the patient's breathing, making loud and stridulous the expiratory effort, as though the victim were groaning in his agony. No general anæsthetic, it is clear, can shelter the brain from the assault committed upon it by the injuries inflicted during an operation. Crile has therefore suggested that by means of local anæsthetics—novocaine for the skin, quinine and urea for the parietal peritoneum—a barrier can be erected around the area to be operated upon, so that no nerve impulses can be conveyed from the territory so isolated. The field of operation, that is to say, may be temporarily disconnected from the brain, not only at the time of operation, but for periods of one to five days subsequently. The operation then is conducted in an area which, for the time being, does not belong to the patient, which he cannot reach by any impulse directed towards it, and which can be dealt with as the surgeon wishes without the patient having any power of receiving impressions from it.[1]

But this is not all. Shock may be produced not only by physical violence, but also by psychical disturbances, by emotional excitement, by the receipt, for example, of good or bad news or by fear, the suspense and the trials of some great ordeal. By many patients their submission to an operation is viewed with dread and apprehension. In order that the best results should follow upon our work it is necessary that every consideration should be shown to a patient, and every proper regard to his wishes; every encouragement should be offered, and the impression forced upon him that all those engaged in the operation or his after-treatment are working strenuously to the one end—his assured and rapid recovery. The fears which hover round the last hour before an operation are greatly modified by the administration of a small dose of morphine with scopolamine. A happy frame of mind is thereby induced, and very little nitrous oxide gas is required to put the patient soundly to sleep. The memory of the conveyance of the patient to the operation theatre and of the administration of the anæsthetic is often abolished by these measures. This is, in brief, the method of Crile, which I have used for many months, and which has added a pleasure to my work that is really immeasurable. To the great discoveries of Morton and of Lister this of Crile seems to be the fitting completion.

Several interesting side issues have developed as this procedure has become more widely practised. The most striking of all improved results is seen in the treatment of exophthalmic goitre. In England we see little of this disease, and very few operations appear to be necessary. In America, where the days are more strenuous and the rush of life more eager, operations are more often and more urgently needed. After such operations it was no uncommon thing to find that the patient suffered profoundly from "shock," and the heart beat so rapidly that it often seemed to be galloping to death. After an operation conducted by Crile's method the emotional activities of the patient are undisturbed, and within a few days his whole appearance and condition undergo a striking change for the better. "Aseptic wound fever" is almost certainly due to psychical factors.

[1] THE LANCET, July 5th, 1913, p. 7.

EARLY SYMPTOMS AND LATE SIGNS.

Equipped with these new powers, due to the three discoveries of ether,[2] of antisepsis, and of anoci-association, the surgeon has been empowered to conduct his investigations into the conditions of disease in an entirely novel manner. Half a century ago a patient who was suffering from any form of abdominal disorder could not do more than describe his symptoms in detail to his medical attendant. He could not lend his body to inquiry, and no investigation of the parts concerned in his disorder could be conducted until after death. Death might occur from the final stages of this same disease, or more often from some intercurrent and independent malady. It was difficult then for the pathologist conducting an examination of the body to make the symptoms and the signs tally, for at this stage they had probably ceased to correspond one to another. The final ruin of an abbey tells us nothing of the domestic habits of the monks who found shelter within its once unbroken walls. The ultimate devastation in a lesion of the stomach, such as is seen on the necropsy table, tells us nothing of any value of those early wanderings from the normal condition which the same parts had once displayed. Terminal events may seem to have no connexion, or at best a very remote one, with the early changes of which they are the outcome. All the knowledge our forefathers possessed of the power of organic changes to cause clinical symptoms depended upon an inquiry into those changes when they had reached the last stage in their career. This last stage might be disastrous, as in the case of a chronic ulcer of the stomach which had led to cancer; or it might be inconspicuous, as in the case of a duodenal ulcer which had healed, as such ulcers sometimes will, without leaving any scar, or only such as the pathologist in his haste may overlook. So all was confusion. Two incompatible things were considered side by side—early symptoms and late signs. When we consider the crushing disadvantages under which our forefathers worked it is amazing to find how much they did, and with what accuracy they had solved many problems. The most conspicuous example of this extraordinary insight into abdominal diseases is, I think, afforded by the work of Brinton, whose books on "Diseases of the Stomach" and on "Ulcer of the Stomach" for wide observation, profound and cogent reasoning, and beauty of language have never been challenged by those of any other writers. But with the new methods to which I have referred the study of the pathology of the living became possible. Symptoms recited at the moment could be ascribed to the lesion disclosed by the operation in the precise stage of its existence in which it was capable of arousing those symptoms. The history of abdominal surgery in the last ten years is the tale of the lessons that were learnt.

The most considerable revolution has occurred in connexion with our inquiry into the condition of "dyspepsia." To any who have no acquaintance with their works I can hardly imagine a greater intellectual delight than to read what Brinton, Johnson, Sir Thomas Watson, and other early fathers have written upon the subject of dyspepsia. With perfect accuracy of observation in many instances, with supreme mastery of English in almost all, they tell the story of many of the forms of dyspepsia. But none of them realised, as we by degrees have come to learn, that dyspepsia is so often a manifestation, not of a nervous or functional disorder, but of a real organic change. The story of how this all came about may bear retelling.

In the early days of gastric surgery operations were undertaken either for the relief of patients afflicted with carcinoma, after the methods laid down by the great pioneer and master, Billroth; or for the treatment of cases of pyloric obstruction by the operation of gastro-enterostomy, suggested in a whisper by Billroth's assistant, Nicoladoni. Of cancer I have at this moment nothing to say. In cases of pyloric obstruction the operation gave results which were quite amazing in their character and rapidity. Patients, emaciated almost to the last degree, unable to take more than the most meagre of meals, afflicted with copious vomiting at intervals of only a few days, became in two or three weeks happy

[2] I say nothing of chloroform, for I dislike and fear it intensely and use it hardly at all.

mortals, with keen relish for food, which gave no unease, and which was retained without difficulty. Many patients underwent a veritable resurrection; one of my patients weighed 51 lb. when operated upon and a few years later weighed 131½ lb., and in several instances I have known the weight to be doubled.

"GASTRIC ULCER" IN THE RIGHT ILIAC FOSSA.

So marvellous were these results that the eager activity of surgeons led them to employ the same method in other cases of "gastric ulcer." Patients who for years had suffered the misery or the martydom of indigestion readily submitted to any operation offering a prospect of relief. But it soon became apparent that the results were not so brilliant in the later as in the earlier cases, and the dreadful mistake was widely made of accepting the diagnosis of "gastric ulcer" as positive in all patients who presented the symptoms which the text-books of medicine had told us were pathognomonic of the disease. Patients who suffered from pain, vomiting, and hæmatemesis were held to be the victims of "gastric ulcer," and for gastric ulcer the approved surgical remedy was gastro-enterostomy. Little by little the truth dawned upon us that "gastric ulcer" was a perilous diagnosis to make. For, with whatever confidence the existence of this lesion was predicted, disappointment and dismay followed fast upon the investigation of the parts. The stomach in these cases often showed no trace of that hard white scar which we knew must indicate the site of an ulcer of old standing. For a long while we were at a loss to know what the cause of the symptoms might be, when all the stomach walls and the duodenum appeared healthy. The scope of inquiry in such patients was therefore widened, and the discovery made which excited the deepest disbelief in the minds of many and which still meets with incredulity—the discovery that in the majority of cases which come to an operation a "gastric ulcer" has its place in parts other than the stomach.

There is now no longer any doubt in my own mind that the commonest site of a "gastric ulcer" is in the right iliac fossa. That is to say, that in the majority of cases in which the most erudite teaching of the most astute German physicians would justify or compel a diagnosis of ulcer, the patient is suffering from a lesion elsewhere, and more often than not from a lesion in the appendix. The appendix may present a variety of conditions, but they are all alike in one particular—they are all obstructive in character. Infection and obstruction together, or apart, as Sir Bertrand Dawson has well said, make all the ills from which a patient derives abdominal trouble. In the appendix both may be at work at the same moment; indeed, one follows inevitably upon the other. In my experience there is no appendicitis without obstruction. In these cases of mimicry of gastric ulcer, is the stomach, then, quite healthy? In my earlier and less complete observations I often thought it was. Now I feel sure that there is, I think I may say always, such a change in the appearance of the organ as will enable the most absolute prediction to be made that the appendix is diseased. These changes are: a vivid injection, a deep congestion of the pyloric portion of the stomach over a distance of two or three inches at least; a great, irregular, eager activity of contraction, the muscles of the part appearing to writhe in angry contortions; and thirdly, an enlargement of the subpyloric group of glands. The explanation of these changes is, I think, now clear; of their existence there is no longer any doubt. The present position of our opinion is accordingly this, that in many of the cases of "gastric ulcer," the symptoms of which are pain, flatulence, acidity, heartburn, vomiting, and hæmatemesis, the lesion primarily responsible for such symptoms does not lie in the stomach. The lesion is one in which infection and obstruction are in league to do harm, and its most frequent location is in the appendix.

The evidence seems to be increasing, and is, indeed, already abundant, in favour of the view that these distant infections, whether in the appendix or elsewhere, which often produce the gross lesions just described in the stomach may be the precursors and the excitants of a chronic ulcer of the stomach. The experimental work of Turck, Bolton, and Wilkie has shown how ulceration of the gastric mucosa may be set up by infecting agents, and may be perpetuated by the inability of the stomach completely to empty itself in the normal time. To infection, stasis is added and often also an increased acidity, or at least an acrimony of the gastric juice. Gastric ulcer, then, would appear to be almost always a secondary disorder; the primary fault lies not in the stomach, but elsewhere, its expression is manifest in the stomach because of the particular series of incidents which occur therein. This much is certain—that when cases of gastric ulcer come to the operation table the evidence of other and apparently older lesions is rarely wanting.

CHRONIC ULCER AND CARCINOMA.

Among the most notable of the gifts of surgery to medicine is the proof that in a large proportion of cases the onset of cancer of the stomach is not a new and unaccountable thing, but is, on the contrary, a tardy development upon an earlier condition which for years had clamoured for recognition. It appears to me that the work of the Mayo Clinic has offered irrefragable proof of this assertion.

I am, of course, well aware that all cases of cancer of the stomach, unhappily, do not come to the surgeon. No one but the surgeon can do any good to patients so afflicted. Yet there is a strange timidity of approach to the surgeon which is unaccountable, and far too often the favourable period in the history of a case is allowed to slip away before any recognition of the real conditions is attempted. It is true, then, and must be admitted, that when the surgeon speaks of the work which passes under his hand he is not speaking of the whole. Nor is anyone else. Neither the physician nor the post-mortem investigator knows the whole range of cases; indeed, each sees far less nowadays than the surgeon. The view of the latter, therefore, if not all-embracing, is doubtless wider than that of anyone else. The experience of the surgeon shows—and here geographical considerations seem to matter little—that, roughly, two out of three of all patients who come for relief from a condition of carcinoma of the stomach give a history of inveterate and recurring dyspepsia over a stretch of many months or years. No one knows so well as the surgeon, for he made and repeats daily the discoveries, that such a history does not mean that there is a chronic ulcer of the stomach, healing and breaking down afresh, during all that time. But though we are grown chary of making a diagnosis of "gastric ulcer" with that ease and certitude which formerly attached to the physicians of all countries, we can and do make an accurate diagnosis in a large proportion of the cases, if only those patients are allowed to be suffering from "gastric ulcer" who can hardly be supposed to be the victims of any other organic lesion. The surgeon who walks by sight and not by faith knows that a gastric ulcer is a real thing, though so many impostors have claimed his attention. In the majority of the cases of gastric carcinoma the history given of earlier attacks makes it almost certain that these were due to a veritable ulcer of the stomach. There may be, I fully admit, errors in this estimate; but making all the allowances that our operative experience warns us to be necessary, there can be, I think, no doubt at all that a genuine chronic gastric ulcer has been the cause of that dyspepsia of which recurring attacks are noted. In one of these attacks, perhaps after an interval of months or years of freedom, something different is noticed. The attack is heralded in the old way; at first no difference between it and the others may be observed. But by degrees it is realised that something worse is occurring. The symptoms, which in earlier attacks were so easily amenable to careful treatment, to rest, to sparing diet, and so forth, have now become more severe and incoercible. Relief does not come from the measures which before have been so instantly successful. Moreover, weight is more rapidly lost, anæmia may develop, and anorexia is most persistent and distressing. This is the occasion, all other and more favourable occasions having lapsed, when instant—it can hardly be called precocious—surgical treatment should be urged. The patient has now arrived at middle life, or has passed it, and the diagnosis of cancer may tentatively be made and should be acted upon with alacrity. Surgical intervention for purposes of inquiry has hardly any mortality nowadays. If a cancer be found and a resection of the stomach is undertaken, the mortality will vary with the expertness of the hands which practise it. But whatever that mortality may be, it cannot attain the death-rate of

inaction and of "expectant" or medical treatment, which is exactly 100 per cent. It was urged by Dr. W. L. Rodman many years ago that resection of the pyloric end of the stomach for the ulcers that singly or in clusters are found there was the most prudent mode of treatment. In his clinic at Rochester Dr. W. J. Mayo has for several years resected the stomach not only for chronic ulcers in the vicinity of the pylorus, but also for those tumours which might be due to ulcer or might be due to cancer, for declared cancer and for those cancers which, though evidently not curable because of the enlargement of distal, secondary glands, or other visceral deposits, were yet removable. In his so safe hands resection has hardly any greater mortality than gastro enterostomy. This procedure is questionless the ideal one. It has afforded, of course, a unique series of specimens for investigation. Dr. Wilson and Dr. MacCarty conclude from their examination of all the material so furnished that in 71 per cent. of these cases of cancer of the stomach the malignant process is engrafted upon a simple one, that cancer is really due to a secondary change which starts in the edge of an ulcer of long standing. My own material, far less in quantity, bears out their contention. It has been shown that in the base of these ulcers tending to cancer the mucosa has gone, leaving only scar tissue; in the overhanging border of the ulcers the mucosa is proliferating, and some epithelial cells, nipped off by scar tissue, are showing all the stages of aberrant proliferation with infiltration of the surrounding tissues and metastases in the lymphatic vessels of the stomach wall. The truth of these observations is hardly yet admitted by those whose inquiry has been based only upon specimens found in the post-mortem room or on the shelves of the museums—upon parts, that is, that have been long dead, and subjected, no doubt, to the many changes which death and swift decay bring in every cell. Upon the post-mortem table only the final dilapidated ruin of the disease is seen; in specimens removed during life the disease in its earlier stages can be scrutinised. The material upon which the pathologist has formerly worked has not been favourable to the discovery of the truth; the sources of eternal truth were poisoned.

It would be hard to decide among so many strong competitors as to the primacy of any piece of work given out by the Mayo Clinic. It is, however, safe to say that the real and permanent value of the contributions to this subject of cancer of the stomach, both from the technical and the pathological sides, can hardly be overstated.

DUODENAL ULCER.

The infection, which has its origin in the appendix or in the intestine, wreaks other harm than that upon the stomach wall. Of duodenal ulcer and of cholelithiasis we have also learnt that they are usually secondary manifestations. Of duodenal ulcer I have so recently and so fully written that it is not necessary here to do more than record the fact that a full knowledge of its symptoms and course, and the power, unrivalled in any other abdominal disorders, of making an accurate diagnosis are not the least important of the gifts of surgery to medicine. Of this disease almost nothing was learnt after inquiry from the dead alone, except of those late preventable disasters which come from its unchecked course. In the early days of our recognition of this condition we were assailed by a formidable array of post-mortem statistics which went to show the rarity of the disorder, and the absence or the inconstancy of any symptoms which could be attributed to it during the life of the patient. We now know the great frequency of the disease—every month I operate upon more cases than were formerly recognised in the post-mortem room of the largest hospitals in ten years—and the claim may truthfully be made that of all abdominal diseases none can be more certainly discovered by a scrutiny of the anamnesis alone.

THE ETIOLOGY OF GALL-STONES.

Another and equally important reversal of opinion has occurred in connexion with cholelithiasis. It was formerly the accepted belief, and as fallacies die hard may still be the view of some, that in a large percentage of cases gall-stones were "innocent"; they declared their presence by no apparent sign, and their existence threatened no peril to the health or life of the patient.

The work of Lartigau upon the etiology of gall-stones is of the first importance. He showed that active organisms taken up by the portal stream from the intestine were passed through the liver, which acted as a "destructor." They emerged from it in the bile, lifeless. Some few, however, under special circumstances, made their escape, and remained active in the bile which flowed to the intestine. If the organisms which find their way into the gall-bladder are violent in their activities an acute inflammatory condition, of a degree which varies with the intensity of the infection, is caused. There may be any gradation from an acute phlegmonous cholecystitis to a trivial and evanescent catarrhal condition of the mucosa. If the germs be in an attenuated condition the contractile power of the gall-bladder is competent to expel them, and no harm results. So far as experiment serves to show, a stone can only develop in the gall-bladder (and the gall-bladder is the factory wherein all stones are made) if, with a mitigated culture of micro-organism, there is some retardation of the outflow of bile. Sepsis and stasis must go together. The gall-bladder then puts forth its own efforts to protect itself, and secretes cholesterin, which being deposited upon the surface of the germs, clumped as they probably are, safely immures them. A gall-stone, then, consists of a deposit of cholesterin (alone, or with the addition of other salts) upon a nucleus of organisms which have intruded into the gall-bladder. Every gall-stone, as I have said before, is a tombstone erected to the evil memory of the germs that lie dead within it. The frequency with which gall-stones lie inert within the gall-bladder, causing no harm and arousing no symptoms, is so very small as to be quite negligible. It is certainly much less than 1 per cent. in all those cases which come for surgical treatment, and, though I admit that this estimate involves a possible fallacy, yet the truth cannot be known of all the cases in which gall-stones exist, for neither operative work, nor the examinations of the dead, nor the records of the "spas," reveal the whole matter.

THE INAUGURAL SYMPTOMS OF GALL-STONES.

The error that has found a place in the minds of all medical men, and has been faithfully carried down from one generation of text-books to another—that in the majority of cases gall-stones cause no symptoms—has been for ever dispelled by the work of the surgeon. In operating upon cases of advanced cholelithiasis a history of inveterate though perhaps trivial dyspepsia over a long period can almost always be obtained. In operating upon patients for the relief of other conditions—myoma of the uterus, ovarian or other pelvic conditions, appendicitis or ulcer in the stomach or duodenum—a routine examination of the gall-bladder and kidneys should be made. Every now and again stones will be found in the gall-bladder, and far more rarely in the kidneys. In the case of the former a clear history of dyspeptic troubles can, in my experience, invariably be obtained. It is true that these symptoms are not those which are commonly recognised as being due to a gall-bladder condition, but the gift of surgery to medicine consists here in the true portrayal of those clinical manifestations which only an examination of the living could disclose. We now know that the earliest symptoms, the "inaugural symptoms," of cholelithiasis are just as characteristic, just as certainly to be recognised, as those of the later sequels and avoidable complications. And more than this: the very little that was known of cholelithiasis in its clinical aspects has undergone a complete revision, with the result that we are often able to declare not only the presence of stones, but often the position of that which is causing the most serious trouble. The only circumstances under which symptoms are not at the moment aroused by stones which lie within the gall-bladder exist when the cystic duct has become permanently closed and the walls of the gall-bladder, thick, and white, and hard, embrace firmly the stones that lie harmless within it. This is the "natural cure" of Rutherford Morison, a condition which develops only after months or years of symptoms, often of great severity. It is Nature's cholecystectomy, and though Nature may be an admirable physician, her skill as a surgeon is of the lowest order, and her work cumbersome, clumsy, and dangerous.

LESIONS OF THE PANCREAS.

It is as an outcrop of the work of the surgeon on gall-stones that all our modern knowledge of the clinical aspects of chronic pancreatitis has sprung. The acute form of pancreatitis was first recognised and, with something nearly

approaching to finality, described by one of the greatest of physicians—Dr. Fitz of Boston. But of chronic inflammation, of stone, of cysts, and of the mimicries of cysts, nothing was heard or known till the surgeon came bearing these gifts in his hands.

We know well the great change that comes over all parts of the body after death; the face changes, wrinkles are smoothed away, the cheeks sink in, the eyes are lustreless, the orbits hollow. Other parts change equally, and among them the pancreas, perhaps, most of all. In a case of acute pancreatitis the gland, at the moment of operation, seems one massive phlegmon—tumid, doughy, and with no abrupt margin. After death it appears to be merely a bruised and blood-stained organ. So with the gland in a state of chronic inflammation. To the hand of the operator it may feel large and densely hard, and it may be responsible for the obstruction and a considerable dilatation of the common bile duct. After death it seems hardly altered from the normal, and certainly in earlier, less exact days would not have attracted close attention. The evidence of the operator and the pathologist was then incompatible, because neither seemed to recognise that their approach to the problem was from different points of view.

The question of chronic pancreatitis was first brought before the minds of surgeons by Riedel, who noticed that in many operations upon the biliary passages the pancreas was large, hard, and unduly firm. In three recorded cases he believed the patient to be suffering from carcinoma of the head of the gland, and he gave, accordingly, a hopeless prognosis. Two patients recovered, and remained perfectly well; the third patient died, and the examination of the pancreas showed no trace of malignancy, but the plain evidences of a chronic interstitial inflammation. Little knowledge, however, sprang from this observation, until Mayo Robson, with his then unrivalled experience of cholelithiasis, showed the frequency and the clinical importance of pancreatitis, and convinced us all of its powers of mimicry both of carcinoma, and of the calculous form of common duct obstruction.

Its mimicry of carcinoma may be complete. Painlessly and progressively the patient may develop jaundice, which continues to deepen until the "black jaundice" of the older writers can be recognised. There are great loss of weight and prostration, hebetude and misery, though often the appetite is unimpaired. The liver enlarges and the gall-bladder distends to a degree which allows it to be easily seen and felt protruding below the rib margin. In accordance with the law of Courvoisier we assume that such a dilatation of the gall-bladder is due to causes other than stone. An examination of the stools might show a complete absence of bile pigment, and this may seem the most conclusive evidence of carcinoma, for a chronic inflammation, however inveterate, rarely causes an absolutely impermeable block to the passage of bile.

CHOLECYSTENTEROSTOMY.

With the history of a condition such as this, one could hardly fail to make a diagnosis of growth and predict a speedy ending to the case. But no one living is infallible in the differential diagnosis of obstructive jaundice. The diagnosis is always so difficult, and the chance of a life saved so important, that, however positive the evidence of malignancy may be, I advise operation in all cases. So far as immediate amendment is concerned, there is little to choose between the malignant and the benign cases. In both the patient begins to improve, the jaundice falls away slowly, sometimes very slowly, and weight is soon gained. The operation performed consists in joining the gall-bladder to the intestine, to the duodenum if easily available (it may be quite inaccessible, lying high and remote, when the liver is enlarged and the gall-bladder over-full), or to the stomach. It may be feared that when all the bile passes directly into the stomach, nausea, vomiting of bile, or loss of appetite results. Such fears are groundless. I have joined the gall-bladder to the stomach in more than 20 patients who have survived a year or more, and there is no suspicion of any special discomfort attaching to the operation. I have patients living still upon whom I operated four, six, and seven years ago in the confident belief that they suffered from carcinoma and would shortly be dead. It is impossible for the most astute clinician or the most subtle pathologist to discover by physical signs, from the anamnesis or from the chemical examination of urine and fæces, whether a simple or a cancerous disease is present. He may shrewdly guess, but a guess is a poor peg on which to hang a man's life. All cases of obstructive jaundice should be operated upon; the mortality of cholecystenterostomy now is trifling if we take into account the severity of the disease and the outlook. Apart altogether from the prolongation or saving of life, almost every patient will declare that the relief from the maddening torture of itching is worth every sacrifice.

Acute pancreatitis, so accurately described by Fitz, remained for long a desperate and often lethal disorder. The onset of the symptoms was so abrupt, their course so rapid, and the fatal event so precipitate that for many years surgeons were quite unable to realise the moment for swift intervention. When operation was undertaken it was generally upon the mistaken diagnosis of perforating ulcer of the stomach or duodenum. And it was not until Ramsay, in 1902, showed that the chief surgical indication here, as in the case of a phlegmon in the extremities, consisted in the relief of tension that success began to attend the surgeon's efforts. Now it is a matter of very little difficulty to make an accurate and timely diagnosis of acute pancreatitis, and the recovery of the patient can generally be assured. A tribute here may fittingly be paid to the work of Simon Flexner and Opie, who showed how apt an intense inflammation of the gland is to follow upon the infection of its duct by bile, by chemical irritants, or by infective agents. Acute pancreatitis is not seldom associated with cholelithiasis, bile which is obnoxious to the gland passing from the common duct to the canal of Wirsung when the orifice of the ampulla is blocked by a tiny stone.

Other diseases of the pancreas, cysts and calculi, have lent themselves also to accurate diagnosis and successful treatment by the surgeon. One of the very ablest and most original papers contributed to the literature of surgery in my time appeared in the *British Medical Journal* in 1892 (vol. ii., p. 1051). It was written by the great surgeon and my very good friend, who preceded me in the delivery of this annual address, the late Jordan Lloyd. He pointed out that, contrary to the generally received opinion, the fluid tumours appearing in the epigastrium after the receipt of an injury were not veritable cysts of the pancreas, but accumulations of fluid in the lesser sac of the peritoneum which had closed at the foramen of Winslow. Calculi are rarely found in the pancreatic ducts. Their presence has been recognised, and in a few cases the stones have been successfully removed, since the inauguration of surgical treatment by Pearce Gould in 1896.

THE SOURCE OF INFECTION IN THE ABDOMEN.

Among the most interesting and possibly one of the rich gifts of surgery to medicine is the hypothesis that intestinal stasis, with the associated condition of absorption of toxins, is responsible for many of the diseases which attack, not only the abdominal viscera, but even also parts remote therefrom. Perhaps no subject in medicine to-day has received more discussion, has been more bitterly assailed, more often attacked by derision rather than by argument, and more cheerfully supported than this. Its author, Arbuthnot Lane, is a man whose mind moves easily along new paths. Such a pioneer has often reached his destiny before other tardy travellers have set out upon the way. The pioneer in all branches of knowledge rarely himself reaches the truth—he is more apt to overreach, or to be content to guess the road that lies ahead without beating it down with his own foot tread.

In contemporary surgical history many observers, as I have pointed out, have had their minds attracted to a firm belief in one thing—namely, that many of the diseases for which surgery is called upon to deal are not primary disorders, but are secondary; that they depend for their existence and extended development upon some common cause; and that this common excitant is an infection which expresses itself now in one way, now in another. The conditions I have already mentioned—ulcer of the stomach or duodenum and cholelithiasis—are, in the belief of all of us who do much work for their relief, really dependent upon an infection. For my own part I look upon the appendix as the most potent and the most frequent cause of offence. Arbuthnot Lane takes a wider view. He believes that the intestine itself is the factory in which the poisons are

produced, which cause, or make more easily possible, not only the various conditions I have named, but also such diverse and distant conditions as "rheumatoid arthritis," tuberculous disease of bones and joints, diseases of the breast, cystic and malignant, of the thyroid gland, and many other conditions. At first it was supposed that the large intestine was the malefactor, and some slender support was possibly derived for the hypothesis from the work of Metchnikoff and others. More recently the delayed drainage of the small intestine has been held more blameworthy. Various bands and kinks have been described in different parts of the alimentary canal, and these have been held responsible for the obstruction, behind which dilatation and stagnation occur. Controversy has raged round the question as to whether these veils and kinks were developmental in origin, inflammatory, or evolutionary; and very often the opinions of a writer are formed exclusively upon, or prejudiced by, the one out of many possible methods of examination to which he has devoted exclusive attention. The terminal ileal adhesion, for example, which is held by many to be the most powerful of all for evil, clearly owns at least two entirely different origins. The most common form of it, in my view, is that which depends upon inflammation of the appendix. But it is interesting to recall that in my book on "Retroperitoneal Hernia," published 14 years ago, I point out that the "physiological fusion" of Toldt occurs to excess in two parts of the small intestine, with the result that there occurs "an adhesion of the upper few inches of the jejunum, or the lower few inches of the ileum to the posterior abdominal wall." I point out there, moreover, a possibility which is constantly overlooked, that this physiological agglutination is not a process which ends abruptly at birth, but that it continues afterwards; it is possible, indeed probable, that it gradually advances during adult life. So far as the large intestine is concerned, my own experience points to the splenic flexure as the part where an arrest in the flow of contents is most prone to occur. Whether this is due to an exaggeration of the normal ligamentous attachments of the flexure, to its extreme fixity, or to the dragging effects of an overweighted and powerless transverse colon I cannot say. But there can be no doubt that obstruction of the most acute, as of the most chronic, kind may be solely dependent upon "kinking" of the large bowel at its splenic flexure, surrounded and held firm by membranous adhesions.

But these points, after all, are only incidental. The main question is concerned, not with the exact means by which effects are produced, but rather with the existence of the alleged effects. The fervid apostles of the new creed are a little prone to bewilder us with reasons for their immature observations. This is only to darken knowledge and to encumber their religion with dogma. We need not yet be greatly exercised over the terms of an explanation of how these effects come about, for in medicine explanation often lags far behind experience. The most exemplary instance of the effects of alimentary toxæmia occurs, perhaps, in the condition which may best be described as Lane's disease. The miserable chronic dyspeptic with sallow skin, dirty tongue, flaccid belly, offensive breath, dusky lips and nails, cold extremities, and constipation that is with some difficulty overcome, is restored to health with incredible rapidity when a short circuit is made between the ileum and the pelvic colon. The claims that Lane makes in respect of such patients must indubitably be admitted. I have never in these cases, nor, indeed, in any of "alimentary toxæmia," found it necessary to consider the question of a removal of the entire colon. As to the further claims which are made, I have not yet arrived at the point where I can admit them, but the hypothesis charms by its simplicity, and attracts by its magnitude, and I am travelling hopefully.

THE SUCCOUR OF THE INDIVIDUAL AND THE SERVICE OF THE CAUSE.

Medicine in its quest of knowledge may rightly levy a tribute from every other science with which it comes into contact. Its doctrines and its practice are tested, may receive support, or be refuted, by work accomplished in other fields. Surgery in recent years has proved a powerful helpmeet not only in the elucidation of those problems of internal medicine to which I have briefly referred, but also by reason of the light it has brought to bear upon the functions of many of the organs in the body. The experimental method, as a mode of inquiry, is not excelled in value by any other, and no experiments, I hold, can claim an equal rank with those which are a part of almost all surgical procedures. The chief glory of the surgeon comes from the dedication of his powers to the service of an individual; but there is a cause also to be served. In every operation something may be learnt, not only of those disorders which call urgently for relief, but of other associated, or it may be separate, conditions which chance at the same moment to be present. The researches so carried out upon a human patient are performed with a sterner sense of responsibility and with a graver ritual, and are impressed by more relevant influences than attach to any other form of inquiry. Their results are accordingly of far higher value. Clinical research, when sedulously conducted and illuminated by the disclosures made upon the operation table, affords the most accurate of all methods of investigation into the diseases by which man is attacked. The succour of an individual should mean also the taking of a step forward in the solution or the better understanding of the manifold and perplexing problems of disease.

ARSENIC CANCER:

A Case under the Care of

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A Pathological Report on the Parts Removed,

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Together with Summaries of 30 other Collected Cases and Remarks,[1]

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THE case here recorded, together with those summarised after it, form a definite group, whose clinical and etiological recognition is chiefly due to the remarkable powers of observation brought to bear on so many fields of study by the late Sir Jonathan Hutchinson.[2] It is mainly owing to his teaching that arsenic as a causative factor in certain cases of cancer of the skin has now been generally accepted by dermatologists, but as the records of such cases are mostly to be found in journals devoted to dermatology the general practitioner has scarcely yet had his attention drawn to the subject. Every well-defined group of disease is of practical interest, and anything that may contribute, however slightly, to throw light on the etiology of cancer must be worthy of consideration, not only by those engaged in cancer research, but by every member of the medical profession.

On Nov. 7th, 1910, I first saw the patient, a married woman aged 29, in consultation with Dr. W. Harwood Nutt, who gave me the following history of her case. About 18 months previously she had first noticed a little thickening of the skin under her wedding ring, and eight or nine months later ulceration had commenced there. When Dr. Nutt first saw her, in February, 1910, he found a deep ulcer on the radial side of the first internode of the left ring finger. He treated it for a month with X rays and then with zinc ionization. No improvement taking place the patient submitted, on August 26th, to the ring finger being amputated by Dr. Nutt at the metacarpophalangeal joint. The ulcerated part was examined and reported to be malignant, being regarded at first as probably an endothelioma. At the operation it was noticed that there was a little scaly, dry patch of skin at the base of the left middle finger, where it had been in contact with the ulcer on the ring finger. At this part of the amputation wound no healing took place, and the wound soon took on the appearance of the old ulcer. A month later the patient showed Dr. Nutt an

[1] The notes of the new case were read at a meeting of the Clinical Section of the Royal Society of Medicine on May 2nd, 1913 (32)

[2] His first published reference to arsenic as a cause of cancer is to be found in an Address delivered at Gloucester in May, 1887 (26).

ulcer on the pubes, which she thought had commenced seven months previously, at about which date she had become pregnant for the first time, though married seven years. The ulcer measured an inch by an inch and a half. Ulceration was also found about the labia, and on the suspicion that the lesions might be syphilitic, potassium iodide in ten-grain doses three times a day was now prescribed. As no improvement took place in a month, a piece of the edge of the ulcer on the pubes was excised on Oct. 20th, and on examination was pronounced to be definitely epitheliomatous. X rays were now again applied to the various seats of disease and to a few rough spots of skin which were present on several parts of the trunk and limbs. The ulceration of the finger, however, continued to extend deeply, and the sore became tender. The termination of pregnancy being now nearly due, Dr. Nutt asked my advice with regard to the hand.

When I saw the patient the appearance of her hand at once reminded me of the coloured plate in Sir Jonathan Hutchinson's "Archives of Surgery," representing Dr. James C. White's first case of arsenic cancer. On inquiring of the patient's mother, who was present at our examination, we ascertained that the patient had nearly all her life had a very dry skin, and that from the age of 7 to 14 she had been under treatment for that condition and for the presence of a few scattered scaly spots. She had taken a tasteless medicine three times a day after meals for at least three years. The patient also stated that for the last six years her skin had been getting worse, a number of small, hard, warty specks having come on her hands and elsewhere, and latterly the skin of the palms having become very thick. For the last few years also the scalp had been very dry, whilst dry white patches of rough skin had formed there and on other parts of the body, one of the earliest being at the site of the present ulcer on the pubes.

The general appearance of the patient was healthy. The left hand had lost its ring finger, and over the palmar aspect of the head of the corresponding metacarpal bone there was a deep ulcer, destitute of granulations, but with thick, red, and tender edges. Among the hair on the pubes there was a raised ulcer, measuring two inches transversely and one and a quarter inches vertically, with thick but not hard edges, and with a smooth, moist, and red base. On both labia minora there were soft and moist strawberry-like growths, that on the left side being nearly half an inch in diameter. On the scalp and on various parts of the body there were a few dry, slightly raised, red patches, from a quarter of an inch to an inch in diameter, covered with whitish scales or crusts, suggestive of seborrhœa sicca, but no doubt part of a general keratosis. On the upper limbs were several spots of or like psoriasis. The cuticle of the palms and soles, except in their centres, was very thick. Scattered over the hands, to a less extent over the forearms and feet, and only sparsely over the trunk and lower limbs, were small lumps with thick and hard epidermis, those on the palms being apparently small corns, but those on the backs of the hands looking like warts and being red at their bases. No enlarged lymph glands could be felt anywhere.

As the patient was expecting her confinement in a fortnight we advised her to have the left hand amputated immediately, and to leave the vulvar lesions to be dealt with after the puerperium. Accordingly, I performed amputation two inches above the wrist on Nov. 9th, and three days later the patient gave birth to a healthy child. She made a good recovery from both events. The ulcer on the hand was examined, and was reported to be epitheliomatous.

The medical attendant of the patient in her childhood was not now living, but on inquiry of his successor, who had formerly been his assistant, the case was remembered as one of psoriasis, and, although the prescriptions could not be found, no doubt was felt that they had contained arsenic.

A month after the patient's confinement X rays were again applied to the pubic ulcer, to the palms and soles, and to the spots on the forearms, whilst carbon dioxide snow was applied to several of the larger warts and corns. The ulcer continued to spread, but the other lesions steadily improved under these applications for two months. The patient then consented to undergo a further operation, and on Feb. 21st, 1911, I excised the pubic ulcer, which now measured three inches by two, cleared out the glands and fat from both groins, and removed the growths on the labia. That on the left labium minus now measured an inch and a half by three-quarters of an inch, and in contact with it there was an ulcerating growth on the left labium majus, as well as the older one on the right labium minus. The scar of the amputation was quite sound, and no glands could be felt in the axilla. The portions removed were all found on examination to be epitheliomatous, with the exception of a non-ulcerated portion of one of the labia. After healing X rays were again applied over the scars for some weeks.

The patient then enjoyed good health for about six months, when she began to be increasingly short of breath, and after three months of dyspnœa she again sent for Dr. Nutt in December. He found evidence of pleurisy on the right side, a friction sound and localised pain being present. The symptoms abated, but early in January, 1912, severe headaches came on in the frontal and occipital regions, extending to the back of the neck, and were soon accompanied by giddiness and occasional vomiting. The optic discs were examined, but were found normal.

On Jan. 22nd I again saw the patient with Dr. Nutt. She was lying in bed cyanosed and sweating. Pulse 120, small, respiration 18, temperature normal. She said the pain was all over the head and down the neck, at times very severe. The least movement of her head increased the pain. The pupils were large but sensitive, and her sight seemed good. There were no signs of recurrence at the sites of any of the parts operated on, nor were any lumps to be felt on the scalp, neck, or elsewhere, except one small nodule at the axillary border of the right breast. The right side of the chest moved very little in respiration. It was dull on percussion anteriorly. The breathing was bronchial and the vocal resonance increased. The patient was too ill to be raised for examination of the back. The left side of the chest and the heart appeared normal. The skin generally was much more natural than a year previously, only a few small corns and warts remaining, and some slight remnants of the callosities on the soles.

A week later the patient became comatose and she died on Jan. 30th. Every effort was made to obtain a post-mortem examination, but without success.

The following pathological report on the parts removed has been kindly supplied by Professor J. M. Beattie, of Liverpool, who was at the time professor of pathology in the University of Sheffield.

"The first specimen submitted to me (August, 1910) was the amputated ring finger, on which there was definite ulceration. Microscopical examination showed a very extensive invasion of the deeper tissues with epithelial cells. These appeared in rounded areas and in lines of varying lengths. There was acute proliferation of the cells, as shown by mitotic figures. In the main the cells were closely approximated to one another, with very little evidence of intercellular substance, but here and there was definite evidence of the development of prickle cells. The condition suggested at first an actual proliferation of the lining endothelium of the lymphatics (endothelioma), but the presence of prickle cells associated with the superficial ulceration rendered the diagnosis of squamous epithelioma, with definite spread along lymphatic channels, practically certain. There was no evidence of the formation of cell nests.

"In October, 1910, I received a nodule of growth from the neighbourhood of the pubes. There was very extensive infiltration of the subepithelial tissues with masses of epithelial cells. These could be traced to their connexion with the superficial epithelium, particularly at the ulcerated area. The epithelial masses were very irregularly arranged and showed very marked prickle cells. There was well-marked and extensive cell-nest formation, and also a moderate degree of small-celled infiltration round the epithelial masses. This infiltration, however, was not a marked feature of the condition.

"In November, 1910, I examined from the amputated hand—

"(*a*) An ulcerated patch from the site of amputation of the ring finger. This showed very extensive infiltration of the subcutaneous tissues and of the deeper muscular tissues by epithelial cells which were closely approximated to one another, and showed practically no evidence of prickle cells or of cell nests. The superficial epithelium was thick and the stratum corneum particularly so, and the spread of the epithelial cells from the deeper layers of the stratum Malpighii could be distinctly traced.

Table of Thirty-one Cases of Arsenic Cancer.

Case number.	Author and observer.	Year of publication.	Title of paper and reference.	Patients.		Evidence of administration of arsenic.		Locality of cancer.	Microscopic confirmation of cancer.	Treatment.	After-history.	Result.
				Sex.	Age.	Facts stated.	Effects observed.					
1	Samuel Pozzi.	1874	"Epithéliome du Pied développé chez un Individu affecté de Psoriasis." (52)	M.	45	Had suffered from psoriasis for 25 years.	"Warts" and thickened nails.	Foot.	Not stated.	Excision.	Not stated.	Not stated.
2	A. Cartaz.	1877	"Développement d'un Cancroïde sur une Plaque de Psoriasis du Doigt." (53)	M.	40	Had suffered from psoriasis for 23 years.	"Warts" on palms and soles.	Right ring finger.	,,	Amputation of affected finger.	Gland at internal condyle affected.	,,
3	James C. White.	1885	"Psoriasis — Verruca — Epithelioma: a Sequence." (7)	M.	46	Had taken Fowler's and Donovan's solutions for six years on account of psoriasis.	"Warts" and callosities on palms, &c.	Palm of right hand; fore and middle fingers of left.	Positive.	Amputation of right hand and of left fore and middle fingers.	Axillary glands affected.	Death 16 months after operation. P.m., cancerous metastases in internal organs.
4	James C. White.	1885	,, ,, (7)	M.	52	Had taken arsenic for long-standing psoriasis.	Horny outgrowths on hands.	Right wrist and perineum.	,,	Excision.	Cellulitis of forearm.	Death six weeks after operation.
5	Hans von Hebra.	1887	"Ueber die Entwickelung von Epitheliom auf Psoriatischer Basis." (50)	M.	Middle aged.	Had undergone many forms of treatment for psoriasis.	"Warts."	Right arm, right thigh, and other parts.	,,	Excision of ulcer on thigh.	Fever and rapid loss of strength.	Death soon after operation.
6	Jonathan Hutchinson (and Waren Tay).	1888	"On Some Examples of Arsenic Keratosis of the Skin and of Arsenic Cancer." (1)	M.	34	Had been long treated by arsenic for psoriasis.	Corns on palms and soles.	Scrotum.	Not stated.	Excision.	Well nine months after operation.	Not stated.
7	Jonathan Hutchinson (and Clifford Allbutt).	1888	,, ,, (1)	F.	25	Had taken arsenic for pemphigus and habitually afterwards.	Roughness of palms.	Near crest of left ilium.	Not made.	General.	Groin glands and skin of thigh affected.	Death early.
8	Jonathan Hutchinson (and John Chiene).	1888	,, ,, (1)	M.	55	Had taken much arsenic for psoriasis.	Keratosis of palms and soles.	Sole of left foot over ball of great toe.	Inconclusive.	Erasion and application of zinc chloride.	Well a year after operation. Later cancer appeared on the thigh.	Death from cancer of stomach a few years after operation.
9	W. Arbuthnot Lane.	1894	"Multiple Epitheliomatous Growths Developing in a case of Psoriasis which had been treated with Arsenic for more than 30 years." (2)	M.	63	Had taken arsenic for 30 years for psoriasis.	Not stated.	Forearm and scrotum.	Positive.	Excision.	Fresh lesions occurred and were removed.	Not stated.
10	Jonathan Hutchinson.	1894	"On Arsenic Keratosis and Arsenic Cancer." (13)	M.	35	Had taken arsenic for some months ten years before for acne.	Keratosis of palms, with corns.	Hand and scrotum.	,,	,,	Fresh lesions occurred, at intervals of years, and were removed.	,,
11	Jonathan Hutchinson (and J. E. Bullock).	1898	"A Case of Arsenical Cancer." (14)	M.	46	Had taken arsenic liberally for many years for psoriasis.	Keratosis of soles.	Over pubes and on back.	Negative.	General.	Glands of groin and pelvis infected.	Death from exhaustion.
12	Jonathan Hutchinson.	1898	"Arsenic given in Early Life; Keratosis of Palms and Soles; Excision of Ulcers from Palms; Cancerous Implication of Cervical Glands; death." (15)	F.	45	Had taken arsenic for 20 months for epilepsy.	Keratosis of palms and soles.	Right hand and below left breast.	Positive.	Excision of ulcers in palm.	Recurrence in scars; a gland-mass in right neck excised.	Death three months after operation.
13	L. Geyer (and Jahn).	1898	"Ueber die chronischen Hautveränderungen beim Arsenismus und Beobachtungen über die Massenerkrankungen in Reichenstein." (49)	M.	35	Had chronic arsenical poisoning from the drinking water.	Melanosis and warts on hands and feet.	Middle finger of right hand.	Not stated.	Amputation of affected finger.	Not stated.	Deaths with metastases in axilla and internal organs.
14	L. Geyer (and Habel).	1898	,, ,, (49)	M.	50	,, ,,	Keratosis and ascites.	Right hand.	,,	Excision.	Axillary glands involved.	Death with internal metastases.

15	L. Geyer (and Habel).	1898	" " (49)	F.	40	Had "chronic" arsenical poisoning from the drinking water.	Melanosis and keratosis.	Middle finger of right hand.	"	Amputation of ulnar half of hand.	Healed well.	Death with chest symptoms some years after operation.
16	M. B. Hartzell (and H. W. Stelwagon).	1899	"Epithelioma as a Sequel of Psoriasis and the Probability of its Arsenical Origin." (3)	F.	35	Had taken arsenic over a long period for psoriasis.	Keratosis and corns of palms and soles.	Hand, left heel, over left breast.	Positive.	General.	A mass formed in left groin and ulcerated.	Death two months after being first seen.
17	James C. White.	1899	Discussion on Dr. Hartzell's case. (4)	M	—	Had taken arsenic for psoriasis.	Keratosis of palms and soles.	Toe.	Not stated.	Amputation.	Healed.	No recurrence 12 or 13 years later.
18	James Nevins Hyde.	1899	" " (4)	M.	—	"	"	Middle finger of left hand.	"	"	Infection of glands in axilla.	Suicide by morphia, on further operation being advised.
19	Karl Ullmann.	1900	"Zur Klinik und Histologie des Arsenik-Krebses." (40)	F.	37	Had taken Fowler's solution for six or seven years for acne.	Pigmentation of face; keratosis of palms and soles.	Face and left heel.	Positive.	Excision.	Recurrence in heel; partial amputation.	Not stated.
20	H. Radcliffe Crocker and George Pernet.	1901	"Epithelioma supervening on Arsenical Keratosis." (31)	M.	60	Had taken arsenic for two years for psoriasis 40 years previously.	Small warty specks on hands.	Right hand.	"	"	Recurrence, followed by amputation of little and ring fingers.	"
21	Jonathan Hutchinson.	1902	"Arsenic Cancer." (16)	M.	70	Had taken arsenic for long periods for a skin disease.	Keratosis of palms and soles.	Right forefinger and back of right shoulder.	"	Amputation of finger and excision of ulcer on shoulder.	Recurrence in both neighbourhoods and enlargement of axillary and cervical glands.	"
22	J. Darier.	1902	"Melanodermie et Hyperkeratosie d'Origine Arsenicale; Cancer Arsenical." (45)	M.	47	Had taken large quantities of arsenic, prescribed for chronic bronchitis.	Pigmentation; keratosis of palms and soles.	Both hands and neck.	"	Erasion and application of galvano-cautery.	Fresh ulcer on right upper eyelid.	General condition deteriorating.
23	Jonathan Hutchinson (and G. Buckston Browne).	1903	"Disorders of the Skin induced by Arsenic." (12)	M.	62	Had taken arsenic for many years on account of psoriasis.	Doubtful.	Buttock.	"	Excision.	Fresh ulcer of face (excised) nine years later.	Death five months after second operation (bronchopneumonia.)
24	Jay F. Schamberg.	1906	"Multiple Cancer of the Skin and Keratosis, following the Long-continued Use of Arsenic." (5)	M.	62	Had taken Fowler's solution at intervals for 25 years for psoriasis.	Keratosis of palms and soles, limbs, and trunk.	Hands, back, and right leg.	"	Amputation of right hand.	Numerous fresh lesions on back, scalp, &c.	General health still good three years later.
25	M. B. Hartzell.	1906	Discussion on Dr. Schamberg's paper. (5)	M.	About 55	Had taken arsenic for long-standing psoriasis.	Keratosis of palms and soles.	Hand.	Not stated.	Excision followed by amputation.	Disease progressed.	Ultimately succumbed.
26	W. Dubreuilh.	1910	"Keratose Arsenicale et Cancer Arsenical." (47)	M.	71	Had taken large doses of Fowler's solution for 20 years for psoriasis.	Keratosis of palms and soles, &c.	Right middle finger, left thumb, and right foot.	Positive.	Amputation of finger; excision of ulcers on thumb and foot.	Healed	Not stated.
27	Udo J. Wile.	1912	"Arsenical Cancer, with Report of a Case." (39)	M.	29	Had for two years taken large quantities of arsenic for his complexion.	Numerous keratoses or callosities on hands and feet.	Left ring finger.	"	X ray exposures.	Great improvement.	Death soon afterwards from an operation on the genito-urinary tract.
28	Jay F. Schamberg.	1913	Multiple Epitheliomata of the Trunk, developing after Keratosis, in a Man who had taken Arsenic for years.	M.	About 43	Had taken large quantities of arsenic for some years as a tonic.	Keratosis of trunk.	Right nipple and scores of epitheliomata all over the trunk.	Not examined	Operation proposed but not carried out.	Not known.	Not known.
29	Frederic S. Eve.	1913	Epithelioma of Neck, due to Arsenical Irritation.	M.	40	Had worked for 20 years in the preparation of arsenic for sheep-dipping.	Pigmentation of skin; warts on hands.	Left side of neck.	Positive.	Excision, together with lymph glands.	Did well, and returned to work.	Well in February, 1913.
30	Charles R. Porter.	1913	Epithelioma of Shoulder and Chest Wall in a Man employed in an Arsenicated Sheep-dip Factory.	M.	35	Had carried tins of arsenicated powder for 20 years.	Pigmentation of skin.	Left shoulder and chest wall.	"	Excision, repeated; radium and X rays.	Involvement of lung, &c.	Death within two years of first operation.
31	R. J. Pye-Smith (and W. Harwood Nutt).	1913	"Arsenic Cancer."	F.	29	Had taken arsenic for psoriasis in childhood for three years.	Keratosis of palms and soles, &c.	Left hand, pubes, and vulva.	"	Amputation of hand; excision of ulcers and glands.	Internal metastases after six months.	Death a year after last operation.

"(*b*) A pigmented and thickened patch of skin from the back of the hand, papillomatous in type. This showed very extensive and irregular thickening of the epithelial layers of the skin. At parts the tissue was homogeneous in structure, all the cell outlines being lost, whilst at other parts there was evidence of marked degenerative changes in the cells. In the deeper parts of the skin layer there was extensive small-celled infiltration, and the projecting processes of epithelium were somewhat broken up by this infiltration. The epithelial cells were irregular and somewhat loosely connected with one another, but there was no definite invasion of the deeper tissue. I take it that this is an early stage in the development of the malignancy.

"In February, 1911, I examined: 1. An ulcer from the pubic region. This showed, in the deeper part of the tissue, very marked infiltration by epithelial cells. 2. Skin from the labium (ulcerated portion). The characters here were similar to those already described, and the condition was definitely epitheliomatous. 3. Skin from the labium (not ulcerated). Here there was no evidence of malignant growth, and there were no characteristic changes in the epithelium which might be associated with treatment by X rays. 4. Glands from both groins. There was definite invasion by characteristic epitheliomatous cells."

Summary of Cases.

The following cases, of a similar character to the foregoing one, are summarised and tabulated before offering any remarks on the series. The last three of them have not been previously published. The first reference number given at the end of the heading in each case indicates the place of the original publication, whilst the other reference numbers refer to reports in journals, reprints, or summaries to be found elsewhere and often of more ready access.

CASE 1. *Epithelioma of the foot developing in a man affected with psoriasis:* Samuel Pozzi (52) (see also 8, 11).—A man, aged 45, whose excised epithelioma was shown at a meeting of the Anatomical Society of Paris in July, 1874, had suffered for 25 years from confluent psoriasis and presented epidermic warts, hypertrophy of the nails and of the skin beneath them, and an epithelioma of the foot, which last had gradually developed from a small excoriation dating from five years after the first appearance of the psoriasis. No later history is given.

(*Note.*—Though no treatment is mentioned, the presence of epidermic warts and hypertrophy of the nails, &c., is highly suggestive of arsenic having been administered for the psoriasis.)

CASE 2. *Development of an epithelioma on the finger of a man affected with psoriasis:* A. Cartaz (53) (see also 1, 8, 11, 54).—A man, aged 40, was shown at a meeting of the Anatomical Society of Paris in November, 1877, who had suffered from psoriasis for 23 years and exhibited minute warty scales on the palms and soles. One of these, on the palmar surface of the second phalanx of the right ring finger, had been scratched off, and the resulting ulcer had gradually enlarged and become callous. It was diagnosed as "cancroide," and the finger was amputated at the metacarpo-phalangeal joint a year after the ulcer began. No enlarged glands were felt in the axilla, but the gland above the internal condyle of the humerus was enlarged and hard. The case was reported within a week of the amputation, and no further history is given.

(*Note.*—No statement is made as to the treatment of the psoriasis with arsenic or otherwise, but as Professor Dubreuilh says (47), "the description of the lesions is sufficiently clear to permit of the diagnosis [of arsenical keratosis] being made.")

CASE 3. "*Psoriasis, verruca, epithelioma: a sequence*": James C. White (7) (see also 1, 8, 11, 12 (Case 1) and plates in 12, 14, and Hutchinson's Smaller Atlas of Clinical Illustrations (plate 20). There are also drawings in the Museum of the Medical Graduates' College and Polyclinic).—Dr. W., a medical man aged 27, practising at Boston, U.S.A., was first seen in 1866 for psoriasis of six years' duration, for which he had taken from time to time "considerable doses of Fowler's and Donovan's solutions." After observation for nine or ten years a change began to be noticed in the spots on the backs of his hands, which became raised into "callosities or some form of warts." Seven years later one of these raised spots on the right palm became excoriated and developed into an intractable ulcer. It was "deeply scraped." Then another similar ulcer appeared on the palmar aspect of the fore and middle fingers of the left hand and was "thoroughly curetted." Ulceration with induration followed in both places and epithelioma was diagnosed. Amputation being suggested, the patient went to Europe and saw Sir James Paget, Mr. Jonathan Hutchinson, Professor Billroth, and Professor Kaposi. This was in the autumn of 1883. In April, 1884, the patient (being then 45) submitted to amputation of his right hand above the wrist and of the fore and middle fingers of his left hand. Microscopic examination confirmed the diagnosis of epithelioma. Enlargement of the axillary glands followed, and the patient died 16 months after the operation. Post mortem malignant growths were found in the lungs, kidney, rib, and elsewhere.

CASE 4. *Epithelioma of wrist and perineum in a man who had taken arsenic for psoriasis:* James C. White (7) (see also 1, 8, 11, 12 (Case 2)).—A man, aged 52, consulted Dr. White for "a sore on his hand of several years' duration." He had had psoriasis from early manhood, and had taken arsenic for it. Ten years before being seen by Dr. White some of the patches on his hands had become transformed into warty outgrowths, and one of these had ulcerated and had resisted all treatment, including scraping and caustics. There was "an ulcer occupying the anterior surface of the right wrist," very similar in appearance to Dr. White's former case. There were no enlarged glands in the axilla, but a second small ulcer was found in the perineum. Both ulcers were freely excised, and microscopic examination showed them to be epitheliomata. The operation was followed by sloughing of tendons at the wrist, and a second operation for their removal was followed by acute cellulitis, which proved fatal six weeks after the first operation.

CASE 5. *Development of epithelioma in psoriasis:* Hans v. Hebra (50) (see also 8, 11, 42).—A middle-aged man, who had been subject to psoriasis since the age of 16, and had undergone many forms of treatment, presented himself with ulcers on the right arm and the external aspect of the right thigh. They had developed by the fissuring of warts, of which over a hundred, on various parts of the body, had been present for 12 years. The ulcers were scraped, and then the one on the thigh was excised and found, on microscopic examination, to be epitheliomatous. The patient died with fever and rapid loss of strength.

(*Note.*—Although no drugs are specifically mentioned, the fact that the patient had "undergone many forms of treatment" under Professor Hebra makes it highly probable that a long course of arsenic was one of the forms, and that to it are to be attributed the numerous warts, &c.).

CASE 6. "*Arsenic keratosis and arsenic cancer*": Jonathan Hutchinson, F.R.S. (1) (see also 8, 11, 23, 27).—The patient, a clerk aged 34, who "had long been under Mr. Hunt's treatment by arsenic for psoriasis," was seen by Mr. Hutchinson with Mr. Waren Tay in August, 1871. At that time soft corns on the palms and soles had been present for 18 months. In February, 1872, a hard-edged ulcer had formed on the scrotum, and in June it was diagnosed as epithelioma and in the following month it was excised. In April, 1873, there was no recurrence, nor were any enlarged glands found. No later information is given.

(*Note.*—This appears to be the earliest case of arsenic cancer observed—viz., in February, 1872.)

CASE 7. "*Arsenic keratosis and arsenic cancer*": Jonathan Hutchinson, F.R.S. (1) (see also 8, 11, 23, 27).—The patient, a married woman aged 25, had her case submitted by letter to Mr. (later Sir Jonathan) Hutchinson by Dr. (now Sir) Clifford Allbutt in 1883. In infancy she had been cured of pemphigus by arsenic, and on its recurrence in youth the patient had taken the remedy for herself and had got into the habit of taking it. The inner aspects of the hands and fingers then became very rough. Before 20 she was married, and when 25 she again consulted Dr. Clifford Allbutt on account of a large ulcer behind the crest of the ilium on the left side, which had developed in a spot of rough skin. The glands in the left groin were enlarged, and later a lump formed in the skin of the same thigh and the gland mass broke down. The patient died soon afterwards. No microscopic examination of the growths was made.

CASE 8. "*Arsenic keratosis and arsenic cancer*": Jonathan Hutchinson, F.R.S. (1) (see also 8, 11, and 12 (Case 3), 17, 23, 27). There is a framed drawing in the Museum of the Medical Graduates' College and Polyclinic.—The patient, a man aged 56, was sent for consultation to Mr. Hutchinson in 1886 by Professor John Chiene. He had for many years been the subject of psoriasis, and had taken much arsenic. Keratosis and corns of the palms and soles, with general hypertrophy of cuticle, had developed, and later two ulcers had appeared in the sole of the left foot over the ball of the great toe suggesting perforating ulcers, but not going deeply, and having thickened edges. Treatment by local applications and rest in a plaster case for months had failed to induce healing. After erasion and the application of solid chloride of zinc the ulcers healed. A microscopic examination of fragments removed was inconclusive. Afterwards cancer appeared in the skin of the left thigh, and a few years later the patient died of cancer of the stomach.

CASE 9. "*Multiple epitheliomatous growths developing in a case of psoriasis which had been treated with arsenic for more than 30 years*": W. Arbuthnot Lane (2) (see also 8, 11, 12 (Case 7)).—The patient, a man aged 63, sought treatment at Guy's Hospital in April, 1892, for an ulcer on his left forearm. He was the subject of psoriasis, and "had for the last 30 years attended the skin department of the hospital. During the whole of this time he had taken arsenic in the form of Fowler's solution." There was an ulcer on the back of the forearm two inches in diameter, and apparently due to the fusion of four ulcers. It was excised and found to be an epithelioma. No glandular enlargement was detected. A year later the man came again with three small epitheliomatous ulcers, of seven or eight months' standing, on the scrotum and perineum. These also were excised and the administration of arsenic was stopped. Nine months afterwards two more small and not ulcerated growths were removed from the scrotum, and on examination were shown to be epitheliomatous, and a month later again (January, 1894) two more, making 11 in all. In one only of these the patient thought the ulceration had begun in a patch of psoriasis.

CASE 10. "*Arsenic keratosis and arsenic cancer*": Jonathan Hutchinson, F.R.S. (13) (see also 8, 11, 12 (Case 8)).—The patient, a man aged 35, who had taken arsenic ("20 bottles") when a young man for acne, stated that soon after leaving off the medicine "a crop of little wart-like indurations appeared on his scalp, and were followed some years later by corns in the palms of his hands. It was not till 10 years after he had left off the drug that one of these corns assumed malignant tendencies and excision was required." Six years later the appearance of a growth on the scrotum called for the same measure, and later still another growth on the scrotum was removed. On all these occasions a careful microscopic examination was made and the "structure pronounced characteristic of epithelial cancer."

CASE 11. "*A case of arsenical cancer*": Jonathan Hutchinson, F.R.S. (14) (see also 8, 11, 12 (Case 5) and three plates in 12 and one in Vol. IX of Hutchinson's *Archives of Surgery* (plate 168). There are also drawings in the museum of the Medical Graduates' College and Polyclinic).—The patient, a man aged 46, who from boyhood had been the subject of psoriasis and had taken arsenic liberally for many years, became affected with keratosis of the soles and many rough patches on the skin of the legs and elsewhere. Three years before he was brought to Mr. Hutchinson, in October, 1897, by Dr. J. E. Bullock, cancerous ulceration occurred just above the pubes. The glands in the right groin then became infected and broke down, the skin over them ulcerating. Another cancerous ulcer formed on the right side of the back, and "there appeared to be also a large gland mass within the brim of the pelvis." The patient died from exhaustion and pain. "Microscopic examination of portions excised from the ulcer for diagnostic purposes had been made by a highly skilled histologist with only negative results."

CASE 12. *Keratosis of palms and soles, following a course of arsenic given for epilepsy; ulceration of palm; cancerous mass in glands of neck of same side:* Jonathan Hutchinson, F.R.S. (15) (see also 12 (Case 12)).—The patient, a married woman aged 45, had eight years previously taken ten drops of Fowler's solution daily for 20 months (during 1879 and 1880) on account of epileptic attacks. She had also taken arsenic when a girl for her complexion. Some years after the course of Fowler's solution keratosis of the palms and soles occurred, and on two occasions thickened, ulcerated portions of skin were excised from her right palm, which closely resembled the appearance in Dr. White's first case. After healing, ulceration recurred in the scars and they were repeatedly scraped. About a year before the patient was seen by Mr. Hutchinson a small growth appeared under the skin below the left breast, accompanied with enlargement of glands in the left groin, and a larger growth in the lymphatic glands at the middle of the right side of the neck. The atter growth was excised with difficulty and was found to be "a squamous-celled epithelioma." Recurrence took place in the scar, and the patient died comatose three months after the operation.

CASE 13. *Chronic lesions of the skin in arsenicism at Reichenstein:* L. Geyer (49).—The patient, a man aged 35, consulted Dr. Jahn about an ulcer on the middle finger of his right hand. He had contracted arsenical poisoning from the contaminated drinking water at Reichenstein, and he had pigmentation of the skin and diffuse and circumscribed warts on the hands and feet. The course of the case was definitely malignant. The patient at first refused operation, but later amputation was performed. He died, however, with recurrence in the axilla and in internal organs.

CASE 14. *Chronic lesions of the skin in arsenicism at Reichenstein:* L. Geyer (49).—The patient, a man aged 50, a native of Reichenstein, who had lived where the water was contaminated with arsenic and had had ascites, developed a skin cancer on the right hand, for which he consulted Dr. Habel. Extirpation had a merely temporary result, for an axillary tumour formed and, after a further operation, the patient died with internal metastases.

CASE 15. *Chronic lesions of the skin in arsenicism at Reichenstein:* L. Geyer (49).—The patient, a woman aged 40, who lived just above the water-contaminated area and was the subject of well-marked melanosis and keratosis, consulted Dr. Habel for an ulcer on the middle finger of the right hand. Operation was refused, but as the ulcer rapidly assumed malignant characters she submitted to removal of the middle, ring, and little fingers, with part of the metacarpus. The wound healed well and the patient lived for some years, dying ultimately with symptoms of phthisis.

CASE 16. "*Epithelioma as a sequel of psoriasis and the probability of its arsenical origin*": M. B. Hartzell (3) (see also 8, 11, and plates in 3).—The patient, an unmarried woman aged 35, who had suffered from psoriasis since the age of 14 and "had taken arsenic in considerable doses over long periods of time," was transferred to Dr. Hartzell's care in November, 1898, by Dr. H. W. Stelwagon. There was marked keratosis with corns of the palms and soles and small ulcers on the palmar aspect of several fingers. There was also an ulcer just commencing on the left breast, an ulcer two inches in diameter on the left heel, and a mass in the left groin. The horny condition of the palms and soles had begun nine or ten years after the onset of the psoriasis, and the ulceration had set in later. A piece of the ulcer on the heel was excised and showed epithelial carcinoma. The growth in the groin soon ulcerated, fever and emaciation followed, and the patient died two months after being first seen by Dr. Hartzell.

CASE 17. *Arsenic cancer:* James C. White (4) (see also 37).—The patient, a man of science, well known, had for a long time had a severe psoriasis, for which he had taken arsenic. Subsequently a keratosis developed on the palms and soles, terminating in an epitheliomatous ulcer, which necessitated amputation of a toe. Probably 12 or 13 years had elapsed since the amputation, and there had been no return of the epithelioma.

CASE 18. *Arsenic cancer of finger in a man who had taken arsenic for psoriasis:* James Nevins Hyde (4) (see also 37).—The patient, a man who had taken large doses of arsenic for psoriasis, presented himself with a moderate keratosis of the palms and soles. The third finger of the left hand had already been amputated by a well-known surgeon at Chicago for a condition which had been recognised as epithelioma. After the third or fourth examination a mass of glands was found in the left axilla, and the surgeon to whom the case was then referred advised an operation for their removal. "The patient went home and that night ended his life with morphine."

CASE 19. *The clinical and histological aspects of arsenic cancer:* Karl Ullmann (40), (see also 44, 51) (with illustration from a photograph)).—The patient, a woman aged 37, who had previously taken Fowler's solution for six or seven years on account of acne on the face, was shown by Dr. Ullmann at a meeting of the Royal Medical Society of Vienna in December, 1897, and again in February, 1898. A year or two after stopping the arsenic keratosis of the palms and soles had occurred, with warts and callosities. An epithelioma (not ulcerated) soon developed in the midst of a patch of hyperkeratosis on the middle of the forehead, and was extirpated six months later. Soon afterwards an ulcer appeared on the left heel and proved more malignant. It recurred after excision, and at a second operation part of the os calcis was removed, and on its again recurring Herr Primarius Schnitzler removed part of the leg. Microscopic examination showed the lesion on the face to be epithelioma (not rodent), and the ulcer on the heel and its recurrence to be epithelioma of exceptional depth.

CASE 20. "*Epithelioma supervening on arsenical keratosis*": H. Radcliffe Crocker and George Pernet (31) (see also 12 (Case 13)).—The patient, a man aged 60, who had suffered from psoriasis at the age of 20, and had then taken arsenic for two years, but never since, consulted the late Dr. Radcliffe Crocker in March, 1900, "for a small painful sore situated on the ulnar border of the right hand, close to the metacarpo-phalangeal joint of the little finger." Two years previously a speck had formed in the skin and had gradually increased in size, and for six months it had been ulcerated. The sore was surrounded by stony hard induration. "Scattered about the hands were several small warty specks," but there was no diffuse keratosis of the palms. There had recently been a small sore at the base of the left index finger, but this had healed. An enlarged but freely movable gland was felt in the right axilla. The growth on the right hand was excised by Mr. Cantlie, but six months later there was induration in the neighbourhood, and, as the patient declined amputation of the hand, the little and ring fingers were removed. The microscope showed epitheliomatous growth.

CASE 21. "*Arsenic cancer*": Jonathan Hutchinson, F.R.S. (16) (see also 12 (Case 6), 19, and plates in 12).—The patient, a man aged 70, applied for treatment in September, 1899, for an ulcer on his right forefinger and another on the back of his shoulder. He stated that when aged 20 an eruption (presumably psoriasis) began, for which, it was subsequently ascertained, arsenic had been given at various times for long periods. A few years before being seen by Mr. Hutchinson he had taken seven minims of Fowler's solution three times a day for some months. Keratosis of the palms then developed and ulceration soon appeared. Corneous patches were also present on the soles and trunk. The finger was amputated and the ulcer on the shoulder was freely excised in December. "Microscopic examination (made by the late Mr. J. H. Targett) showed that both lesions were squamous-celled epitheliomata." A year later the scar of the amputation was sound, and that on the shoulder had healed, but another tumour formed near it and, on excision, proved to be "soft carcinoma of the acinous type." Three years later, though in good general health, the patient had recurrence of growth in the scar on the right hand and enlarged glands in both axillæ and in the right posterior triangle of the neck.

CASE 22. *Arsenical pigmentation, keratosis and cancer:* J. Darier, (45) (see also 12 (Case 14), 18, 35, 55).—The patient, a man aged 47, who had taken for 15 years large quantities of arsenic, which had been prescribed for chronic bronchitis, was shown by Dr. Darier at a meeting of the French Society of Dermatology on December 4th, 1902. The palms and soles exhibited diffuse keratosis and innumerable little cerns, and there was pigmentation of the skin of the face and neck. Two warty patches on one of his hands, and one on the other, had ulcerated, and now presented the characteristics of epithelioma, as did also a small ulcerating growth on the neck, below the right ear. Portions of two of these were excised and showed the structure of epithelioma. No enlarged lymph glands were detected. After thorough erasion and the application of the galvano-cautery all the places healed except one on the left hand. Four months later another epithelioma developed on the right upper eyelid, and general wasting and pallor were present.

CASE 23. "*Disorders of the skin induced by arsenic*": Jonathan Hutchinson, F.R.S. (12 (Case 4)), also private letters from Mr. Buckston Browne and Dr. Willoughby Blackstone. There is a drawing in the museum of the Medical Graduates' College and Polyclinic.—The patient, a man aged 62, who had taken arsenic for many years for psoriasis and whose palms and soles showed keratosis, was operated on by Mr. Buckston Browne (after consultation with Mr. Hutchinson) in October, 1898, an ulcerated piece of skin on the upper part of the left buttock being excised. The microscope confirmed the diagnosis of epithelial cancer. In February, 1907, Mr. Buckston Browne removed from the face another ulcer that would not heal. The patient died from bronchopneumonia five months afterwards, without recurrence of the local lesions. "He had a remarkable tendency to eczema. If he took even a small dose of boric acid, any salicylate or aspirin, eczema broke out violently at once. Plasters were an impossibility and liniments anathema."

CASE 24. *Multiple cancer of the skin and keratosis, following the long-continued use of arsenic:* Jay F. Schamberg (5) (see also 37, 38; two plates in 5; also private letter).—The patient, a man, aged 62, was shown by Dr. Schamberg at the annual meeting of the American Dermatological Association in June, 1906. The patient gave a history of having suffered from psoriasis for 30 years, and of having taken Fowler's solution at intervals for 25 years. On examination no psoriasis was present, but the limbs and the trunk, particularly the back, were covered with numerous small keratosic patches. The palms and soles were keratosic, and on the palms were some wart-like patches. There were also present a painful fissure on the back of the right thumb, a small epithelioma on the back, and a raised growth half an inch in diameter above the external malleolus of the right leg. This last was excised, and microscopic examination showed it to be an epithelioma. When shown a second time (three years later) the patient was in good general health, but the right[3] forearm had been amputated for cancer of the thumb, and epitheliomata were present on the interscapular region of the back, the left wrist, and the scalp, the two latter fungating. The patient now had also "over the entire back scores of lesions varying in character from reddish keratosic patches to well-defined, elevated epitheliomata."

CASE 25. *Epithelioma of the hand supervening on keratosis following the exhibition of arsenic for psoriasis:* M. B. Hartzell (5, discussion) (see also 37; also private letter).—The patient, a man aged about 55, who had taken Fowler's solution for long-standing psoriasis, was referred to by Dr. Hartzell in the discussion on Dr. Schamberg's case in 1906 as having come under his observation at Philadelphia subsequently to the case he recorded in 1899. A marked arsenical keratosis of the palms and soles occurred (small corn-like lesions), followed by an ulcer in the palm of one hand, which, being diagnosed as epithelioma, was excised. Recurrence necessitated amputation of the hand, but this failed to arrest the progress of the disease, and the patient eventually succumbed.

CASE 26. *Arsenical keratosis and arsenical cancer:* W. Dubreuilh (47).—The patient, a man aged 71, was sent to Professor Dubreuilh in June, 1909, by Dr. Lafaye for an ulcerated growth on the right middle finger. For 20 years he had had patches on the elbows and knees (probably psoriasis), for which he had taken arsenic almost continuously. About 14 years later the palms and soles had become red and painful, and after another four years several small ulcers had appeared. When seen by Professor Dubreuilh hard warty excrescences were scattered in abundance over the trunk and limbs, and especially on the palms and soles. The ulcer on the finger, which was now of two years' duration, and had increased considerably during the last six months, was painful and tender. It measured an inch in diameter, was fixed to the middle phalanx, and had hard edges and an excavated and fungating centre. On the left thumb and on the outer edge of the right foot fissured spots were commencing to ulcerate. No enlarged glands were detected. The finger was amputated and the smaller ulcers excised on the advice of Professor Dubreuilh, who afterwards examined the specimens and found the finger-growth a typical epithelioma. (Full histological details of the keratosic and warty lesions are also given in the paper.)

CASE 27. "*Arsenical cancer*": Udo J. Wile (39, with photographic plate).—The patient, a man aged 29, who for two years had taken Asiatic pills (which contain 1/80th part by weight of arsenious acid) for his complexion, began, two years after discontinuing them, to develop a horny condition of the palms and soles. Numerous small warty growths and callosities also appeared on the dorsa and sides of the hands and feet, and a year later "one of these small horny callosities on the ring finger of the left hand broke down, and, attended

[3] Misprinted "left" in the Journal of Cutaneous Diseases (38).

with considerable pain, the ulcer, which had hard, raised edges, slowly grew, till it nearly encircled the distal joint of the finger." Sufficient material from the edge of the ulcer was curetted away to demonstrate clearly in sections the epitheliomatous nature of the lesion. The epitrochlear and axillary glands were not enlarged. After nine short X ray exposures the ulcer underwent distinct involution, its size being reduced by about one-third and the pain being entirely removed. Unfortunately, the patient died at this time from sepsis following an operation on the genito-urinary tract.

CASE 28.—*Multiple epitheliomata of the trunk, developing after keratosis, in a man who had taken arsenic for years:* Jay F. Schamberg. (Private letter: case thought to have been reported at a meeting of the Philadelphia Dermatological Society.)—The patient, a physician aged about 43, who had taken large quantities of Fowler's solution as a tonic over a period of years, became covered over the trunk with scores of small keratoses, with telangiectases, and numerous epitheliomatous growths. One growth, involving the right nipple, was so pronounced that its removal was advised, but the patient did not return, and the subsequent history of the case is not known.

CASE 29. "*Epithelioma of neck, due to arsenical irritation*": Frederic S. Eve. (Unpublished communication.)—The patient, a man aged 40, employed for 20 years in the preparation of material for sheep-dipping (viz., sulphur, soda, and arsenic), who had for two years noticed a small and nearly painless growth above his left collar-bone, was admitted, on July 3rd, 1910, into the London Hospital under the care of Sir Frederic Eve, to whom he had been sent by Dr. C. R. Porter, of Berkhamsted. There was marked pigmentation of the entire skin, with mottled brown areas, extreme keratosis of the palms (which last, however, the patient stated to have been present before he began the work), but not of the soles, a large number of warts on the back of both hands, and an epitheliomatous growth a little above the middle of the left clavicle. This was an inch in diameter, raised and ulcerated, with hard and somewhat everted edge. It was not deeply fixed, and no enlarged glands were detected. Two small areas of desquamating skin were present below the left clavicle. On August 8th the growth was excised by Mr. R. Warren, together with the glands of the left suprascapular triangle and one of the warts on each hand. Sections showed squamous-celled carcinoma; no keratinization; large nuclei to the cells, with relatively little protoplasm, the cells resembling those of a rodent ulcer. The patient was discharged well a fortnight later and returned to work. He continued well when seen by Dr. Porter in February, 1913.

CASE 30. *Epithelioma of shoulder and chest wall in a man employed in an arsenicated sheep-dip factory:* Charles R. Porter. (Unpublished communication.)—The patient, a man aged 35, employed for 20 years in carrying tins of sheep-dip (a powder containing sulphur, soda, and arsenic), consulted Dr. Charles R. Porter in February, 1910, for an ulcerating epithelioma on the left shoulder, which had begun as a wart eight months previously. There was marked pigmentation of the skin all over the body. He was sent into the West Herts Hospital, where the growth was excised, and on microscopical examination it proved to be an epithelioma. Recurrences soon occurred in the skin of the chest wall below the scar, and were removed two months and again seven months after the first operation. As growths still returned and spread he was treated with radium and with X rays at the London Hospital, where he was under the care of Dr. J. H. Sequeira, further operation being considered useless. He suffered great pain, and for a long time he took morphia in large doses. The growths ulcerated and appeared to involve the ribs on the left side both anteriorly and posteriorly. He had continued cough and repeated profuse hæmoptysis. After being confined to bed for six months with increasing weakness he died in December, 1911.

Addendum.—The foregoing cases comprise all that I have been able to find with histories sufficiently conclusive and complete to warrant their being placed in the list. Among them have been included three cases of psoriasis (Nos. 1, 2, and 5) in which, indeed, the history of arsenic is not conclusive; but it has been considered justifiable to include them, because at the time of their occurrence no suspicion rested on arsenic as a contributory cause of cancer, so that its administration, which was so usual for that disease, especially in England and France,[4] during the latter half of last century, may easily have escaped being mentioned, and also because they all exhibited a warty condition of the skin, which is no part of psoriasis, but is frequently seen in arsenicism. They find a place also in the lists of Nielson[5] (8 cases), Hartzell[6] (11 cases), Dubreuilh[7] (20 cases), and Wile[8] (18 cases).

There are other cases, however, to be found in medical literature where the details are too scanty for a satisfactory record, or where, though there may be a reasonable suspicion of its presence, no history of arsenic is given.

Dr. L. Geyer refers (49) to two further cases seen by Dr. Habel, who, however, had lost the notes, where cancer had developed in persons drinking the arsenicated water of Reichenstein.[9]

Dr. H. W. Stelwagon gives a plate (57) showing an epithelioma of the palm of the right hand which had "developed from a keratosis, in a case of psoriasis, after long-continued administration of arsenic. Possibly, however, this may represent Case 25.

M. Tillaux recorded a case (56) where a patch of psoriasis on the back of a middle-aged man had become the seat of an epithelioma, which, when removed by M. Tillaux, was "as large as the crown of a man's hat." The patient had consulted M. Hardy for psoriasis 11 years previously, but the medicinal treatment is not given.

Herr von Neumann (41) showed a man at the Vienna Society of Dermatology who had diffuse psoriasis and an epithelioma of the lower lip, but medicinal treatment is not mentioned.

Dr. C. W. Allen, in the discussion on Dr. Hartzell's first case (4), recalled a case so similar that he thought it was perhaps that of the same patient.

The late M. Du Castel recorded (46), under the title of "lichen corné," the case of a man aged 50, in whom epithelioma on the internal malleolus supervened after he had suffered for many years from well-marked hyperkeratosis of one of the upper and of both the lower limbs. Drug treatment is not mentioned.

Dr. G. W. Wende reported[10] an interesting case of keratosis, resulting in multiple epitheliomata, in a man aged 37, in whom "no history of arsenic had been obtained," but who had "indulged in a few patent medicines." Dr. Hartzell, the late Dr. Nevins Hyde, and Dr. Schamberg, who took part in the discussion, all suspected that the keratosis was of arsenical origin.

Sir Jonathan Hutchinson also mentions in his *Archives of Surgery* and in notes of cases illustrated in the Museum of the Medical Graduates' College and Polyclinic (Case 1, drawer 13) several cases of cancer and rodent ulcer in which he had suspicions, but no proof, of arsenic having been concerned.

(To be continued.)

[4] This is probably the explanation of the opinion of Bazin and of Hardy that they "had seen cancer develop frequently enough in those affected with psoriasis to believe in a certain connexion between the two maladies" (8, 11). Paget expressed the same opinion (27).

[5] Melanosis et Keratosis Arsenicalis, translated by Dr. Elkind (10).

[6] Epithelioma as a Sequel of Psoriasis and the Probability of its Arsenical Origin (8, 11).

[7] Kératose Arsenicale et Cancer Arsenical (47).

[8] Arsenical Cancer, with report of a case (39).

[9] On the other hand, he erroneously credits Power with recording a case of arsenic cancer in a report to the Local Government Board. The cases described by Sir William Power (Report of the Medical Officer of the Local Government Board, 1878, No. 5, p. 31) in an epidemic among infants at Loughton, due to the use of a dusting powder containing arsenic, were not cancerous.

[10] Keratosis Follicularis Resulting in Multiple Epitheliomata, Dr. Grover W. Wende (6).

[1] Centralblatt für Bakteriologie, Band lxviii., 1913.

THE RAPIDITY WITH WHICH CONTAMINATION OF THE THORACIC CAVITY AND ITS CONTAINED GLANDS FOLLOWS INFECTION OF THE PERITONEAL CAVITY.

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As is well known, if a small quantity of an emulsion of a *non-pathogenic* micro-organism is injected into the peritoneal cavity of an animal, one of the earliest signs of an active resistance to the micro-organism on the part of the animal is a leucocytic invasion into the peritoneal cavity and phagocytosis of the injected material. The bacteria are taken up not only by the wandering phagocytes, but also by the sessile phagocytes of the liver, &c. Smears made from the liver, spleen, mesenteric glands, and peritoneal fluid about 12 hours after the inoculation will usually show the presence of a large number of bacteria, and free bacteria in the peritoneal fluid may be no longer found. The majority of the bacteria in the invaded organs and in the peritoneal fluid appear to be destroyed *in situ*, but of those taken up by the liver many are excreted with the bile and leave the body with the fæces. There is no apparent influence on the animal's health, and we say that the animal is immune to the particular bacterium which is unable to grow and multiply on account of the destructive agents of the host. A somewhat different result will be obtained after an intravenous inoculation. In this case the majority of the bacilli become lodged in the lung, although here, also, the liver and spleen both play an important part in the defence of the body, and some of the bacilli are excreted by way of the intestinal tract. With this method of inoculation, however, the kidney is the chief excretory organ and it may be severely damaged as a consequence of the inoculation of too large a dose even if a saprophytic micro-organism is used. Numerous experiments bearing on this question have been performed at the Brown Institution.[1] On inoculation of a *pathogenic* bacterium the mechanism of defence appears to be more or less the same, but it is less efficient, the efficacy varying with the virulence of the bacillus for the particular animal used and the resistance of the animal to the bacillus; the survival or otherwise of the animal depends entirely on these factors.

In naturally acquired diseases one is justified in assuming that much the same mechanism of defence takes place. Such would be the case in a general infectious peritonitis,

or in a localised peritonitis where there is an invasion of leucocytes and the formation of an abscess.

It is well known, as regards the phagocytes, that the majority of micro-organisms are not killed immediately on being engulfed, and, indeed, among pathogenic bacteria a large number are capable of multiplying within these cells, while others are nearly always intracellular and appear to develop almost exclusively in this situation. Many pathogenic bacteria which on inoculation are able to multiply are ultimately killed out if the host does not succumb before it has had time to produce the necessary protective anticorps.

The important organs in the mechanism of defence and the prevention of the bacteria from becoming generalised and causing death of the animal from septicæmia, &c., are the lymphatic glands which act as filters to the lymph, and hold back foreign particles. The blood is thus kept more or less free from infection, and the vital organs of the animal economy are less likely to become infected. In the case of diseases affecting the peritoneum or the organs covered by a peritoneal membrane, it is generally considered that the abdominal lymphatic glands are the chief agents in preventing a generalised infection, while in diseases of the lung the bronchial glands are held to play a similar part. It is also held that in man tuberculous peritonitis is an infection through the intestinal tract, while on the other hand phthisis is an infection through the respiratory passages; a theory which is supported by the fact that a relatively large number of cases of tuberculous peritonitis have the bovine type of tubercle bacillus as causal agent (infection through milk), while tuberculous disease of the lung is nearly always due to the human tubercle bacillus. This theory is not free from objection, seeing that in many diseases the site of inoculation does not prevent the disease from being ultimately produced in its usual situation, although, of course, it influences markedly the severity of the subsequent infection.

A number of experiments bearing on the distribution of the bacilli in the lymphatic glands after the inoculation of an emulsion of bacilli into the peritoneal cavity of rabbits, rats, and mice, and the rapid escape of the bacilli from the peritoneal cavity, have recently been carried out at the Brown Institution. The experiments on the rapidity of escape of the bacilli from the peritoneal cavity were performed as follows. Emulsions of bacilli of the acid-fast group, such as the tubercle bacilli, Johne's bacillus, and B. phlei, and of various non-acid-fast micro-organisms, such as B. pyocyaneus, B. subtilis, B. coli, and several varieties of micrococci were inoculated into the peritoneal cavity of the above-mentioned animals, mice being used in most cases. The quantity of emulsion inoculated was 0·1 to 0·2 c.c. for mice, about double this amount for rats, and 1 to 2 c.c. for rabbits. The animals were killed at varying intervals of time after the inoculation, and a microscopical examination made of the different lymphatic glands, special attention being given to those of the thorax. Where living emulsions were used cultures were also made from the glands. The animals were killed by crushing the cord and medulla, care being taken not to cause any hæmorrhage which would interfere with the subsequent removal of the glands. To obtain the glands one proceeds thus: the skin is laid back and the pectoral muscles removed from the thorax, which is opened with great care so as not to disturb the contained organs; the anterior thoracic wall is thrown back without being completely severed from the rest of the thorax, as this would necessitate cutting the internal mammary arteries; the thymus, which in mice and rats is nearly always prominent, is smoothed down and one of the lobes is carefully raised, when the tiny lymphatic glands, about a pin's head or larger in size, at the apex of the thorax can be seen. One of these glands is snipped off with fine scissors, and after being cut into pieces in a sterile tube it is inoculated on to tubes of suitable medium. Another gland is then taken and a smear made for microscopical examination. Needless to say, the manipulations must be carried out under strict aseptic precautions. Emulsions of acid-fast bacilli proved to be the most suitable for these experiments, both on account of the acid-fastness of the bacilli and the relatively low degree of virulence of most varieties for the animals under consideration. For many reasons it has been found that an emulsion of Johne's bacillus is the most convenient. Johne's bacillus is an acid-fast micro-organism allied to the tubercle and lepra bacilli, and is the causal agent of an intestinal disease of cattle, sheep, &c., called Johne's disease. It is impossible in this paper to discuss the special biological features of the bacillus, but details will be found in the monograph on Johne's disease by F. W. Twort and G. L. Y. Ingram. It need only be mentioned here that the bacillus is pathogenic for mice and rabbits, and possibly for rats, and that it is several months before the intestinal tract becomes infected.

The experiments that have been performed demonstrate that, although the peritoneal cavity is provided with an extensive protective mechanism, inoculated bacilli escape from this cavity and can be found living and virulent in the thoracic glands shortly after inoculation. The rapidity with which this transmission takes place is remarkable, the bacilli being found from two to five minutes later in the glands, and from these cultures may be easily obtained. The bacilli found at the end of five minutes are mostly free, but a few may be already within the cells, and as the interval of time between the inoculation and the death of the animal is extended the number of bacilli not only becomes progressively greater, but the proportion of intracellular to extracellular is relatively much higher than in the animals killed earlier. It is interesting to note that as early as five minutes after the inoculation of the animal cultures can also be obtained from the pleural fluid, but the possibility of contaminating the fluid during the manipulations by the severing of the lymphatic channels is evident. On examination soon after inoculation, of the cervical, submaxillary, axillary, and groin glands no bacilli can be found. No bacilli were found microscopically in specimens made from the thoracic glands and pleural fluid of animals that were killed before making the intraperitoneal inoculation and an examination made five minutes later. A sufficient number of experiments of this description have not yet been performed to allow of very definite conclusions being drawn from them, although positive cultures were obtained. It does not necessarily follow that the human subject would react in the same way as the animals used in these experiments, but there is no reason to suppose that the reaction would be different. If bacilli other than acid-fast bacilli are used they also rapidly invade the thoracic glands, and cultures can be obtained in the same manner. If a mixture of an acid-fast bacillus and some other micro-organisms such as one of the various cocci or bacillus coli is inoculated, the bacteria soon find their way to the thoracic glands, but if the animal survives the inoculation all the bacteria disappear within a few days with the exception of the acid-fast bacilli, which, although not multiplying perceptibly, remain alive for many months.

There does not appear to be much difference in the number of bacilli found in the mesenteric and thoracic glands in animals killed about two to five days after being inoculated, although even as early as this, where the quantity of emulsion inoculated has been small, bacilli are found in the thoracic glands more often than in the abdominal glands. At a later period—at any rate, in the case of mice and rabbits inoculated with Johne's bacillus or tubercle bacilli—the bacilli gradually become less in the mesenteric glands, while in the thoracic glands they remain numerous for several months, but ultimately disappear in an animal unsusceptible to the particular bacillus inoculated. Among 55 rats and mice inoculated intraperitoneally with acid-fast bacilli, and examined over a period of three months, bacilli were found on microscopical examination in the thoracic glands alone 17 times, and in the mesenteric glands alone 5 times. In 7 of the animals bacilli were present in both sets of glands, while in 26 cases they were entirely absent. Johne's bacillus was also found in the cervical and axillary glands of rabbits and mice. All varieties of acid-fast bacilli do not seem to react exactly the same as regards their distribution in these glands—for example, tubercle bacilli seem to have a greater tendency than Johne's bacillus to remain in the mesenteric glands, and the species of animal used in the experiment also appears to influence the result to a certain extent. For a prolonged experiment it is better to use a living emulsion than a heated emulsion, as with the latter there is a greater tendency to accumulate at definite sites and to produce a more rapid caseation of the tissues. It is also possible to perform culture experiments parallel with the microscopical examinations, cultures often being obtained when no bacilli could be demonstrated in the smears from the glands. This is especially the case with Johne's bacillus, which survives for a great length of time in most of the small animals,

cultures from both the mesenteric and thoracic glands being positive in every animal. With the tubercle bacilli growths were more difficult to obtain, and it is obvious that rats and mice destroy these bacilli much more quickly than they do Johne's bacillus. If one is dealing with a bacillus that develops preferably in a special part of the anatomy of the animal used, then it will be found in this situation as is the case with Johne's bacillus. An emulsion of Johne's bacillus inoculated into the peritoneal cavity of a rabbit or mouse will, in some of the animals, eventually produce disease of the intestines and mesenteric glands, where a large number of bacilli may be found, while in the thoracic glands they may or may not be rare. One has here, however, an entirely different factor coming into play—that is to say, the question of the site of the animal body most suitable for the growth and multiplication of the particular bacillus. The place of predilection for the development of a bacillus has often little or no relation to the site of the primary distribution immediately after inoculation.

The inoculation of a certain quantity of oil into the peritoneal cavity to prevent any absorption of septic material has been recommended and has been practised fairly extensively, especially by continental surgeons. A few experiments bearing on this question were also performed, oil being inoculated from 15 minutes to 24 hours before the injection of the bacilli. Although the number of experiments in this direction have not been numerous, they demonstrate clearly that the oil does not prevent the escape of bacteria from the peritoneal cavity and their absorption by the thoracic glands, and it is doubtful if it in any way hinders the dissemination of the bacilli.

Incidentally, the above experiments point to a method by which acid-fast bacilli may be isolated from contaminating micro-organisms and recovered in pure culture in a relatively short space of time, and this means was utilised to isolate Johne's bacillus from the putrid gut of a sheep infected with Johne's disease. Tubercle bacilli were also isolated in the same way from emulsions of cultures purposely contaminated.

The time necessary for the escape of infectious material from the peritoneal cavity is thus often only a question of minutes, and it is obvious that even during an operation if the general peritoneal cavity is accidentally contaminated from the rupture of a localised abscess, &c., ample time is given before the end of the operation for the thoracic glands to become infected, and if these glands are penetrated there is a danger of the infection becoming generalised. These facts may explain the beneficial effect of Fowler's position after abdominal operations.

The expenses of these researches were partly paid for by a grant from the London University (Henry Dixon Fund), and I have also to thank the Royal Society for the grant which has enabled me to purchase the animals used in these experiments.

THE USE OF ARSENICAL COMPOUNDS FOR SYPHILITIC DISEASE OF THE NOSE AND THROAT:

A NOTE ON 16 CASES.

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ASSISTANT SURGEON, THE METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL.

I HAVE treated and followed the history of these 16 patients as follows: 12 in Mr. W. D. Harmer's and Mr. F. A. Rose's clinics at St. Bartholomew's Hospital, 1 in my clinic at the Metropolitan Ear, Nose, and Throat Hospital, and 3 in private patients.

The number of doses given.—These 16 patients have had 43 injections, varying from 1 per patient to 9 (two cases).

The relative advantage of different preparations.—12 injections were intravenous, "606"; 1 intramuscular, "606"; 26 intravenous, neo-salvarsan, "914"; and 4 intramuscular emulsion of "Allenburys" hyposol. All the cases were adults, and the dose was always the equivalent of 0·6 grm. of "606." When more than one injection has been given to any patient, sometimes the second injection was of a different drug from the first. As regards the clinical results and Wassermann tests obtained, in this small series no one preparation appears to be better than another. The advantage of hyposol emulsion is the extreme simplicity of giving it. For "914" may be claimed a very low toxicity. Not a single injection of the 26 given caused a sufficient general reaction to incapacitate the patient for a day, and the drug is given with justifiable confidence in the out-patients' clinic. Against "914" it may be said that many more injections are required to produce a clinical cure or a negative Wassermann reaction; this is illustrated in the tables given below. Some patients weary of the repeated injections, and defeat their cure by refusing to reattend hospital. After an intravenous injection the vein presumably becomes thrombosed and obliterated, either completely, or partially by a concentric phlebitis obliterans; and it is often found that on the next occasion another vein must be used. In 2 cases out of this series I was obliged, after several injections, to do an open dissection. The advantages and disadvantages of "606" are the converse of those of "914."

The interval between injections was one week, unless there were some local or general reaction, when it was two weeks.

The frequency of Wassermann tests.—As a rule the blood was tested after every second injection, except when a sudden change in the clinical picture indicated this test at other times. The blood was tested 48 hours after the injection.

Adjuvant treatment.—Between injections some of the patients had mercurial inunctions, others potassium iodide; the former yielded the better results.

The relation of Wassermann's tests to the clinical findings.—This is not exact. It is true that in none of these cases has a positive Wassermann reaction changed to negative without the patient being cured; moreover, if several doses are required the clinical cure will be complete sooner than the blood test becomes negative. But the converse does not hold good; and when after several injections the patient becomes cured of symptoms and progressive signs, but the Wassermann reaction remains positive, the injections have been stopped pending further recurrences of disease, which in this small series have not supervened during three months. The improvement of the general condition is sometimes most marked, more particularly when there has been some general reaction. In one case the red cell count rose, with two injections of hyposol, from 3,500,000 to 5,200,000 per c.mm.

The diseases treated may be classified as follows:—

Inflammation or Necrosis of Bone or Cartilage.

No.	Bone or cartilage affected, and lesion.	Drug and number of injections.	Result.
1	Ethmoid necrosis.	8, of "914."	Separation of sequestrum; disease arrested.
2	Perforated hard palate (old-standing).	1, of "606."	Unaffected.
3	Perforated hard palate, 3 years' duration, ulceration now active.	3, of "606."	Improved, partly healed.
12	Perforated hard palate, one week's history.	1, of "914."	Cured, healed over.
4	Gummata of septum nasi and frontal bone.	2, of "606."	Cured.
5	Gumma of septum.	7, of "914."	"
6	Gummata of skull and of epiglottis.	1, of "606."	"
10	Periostitis of nasal bone.	2, of "606."	Improved.

Laryngitis with no Gross Lesion.

No.	Injections.		Result.
1	9, of "914."		Cured.
5	9, of "914."		"
9	1, of hyposol.		Uncertain.
11	2, of "606."		Improved.

*Gummatous Laryngitis, Nodular or Pachydermatous.**

12	1, of "914."		Improved.
13	2, of "606," then 1, of "914."		"
14	2, of "914."		Unaffected.

* As a result of the absorption of excrescences in the anterior commissure or on one cord Nos. 12 and 13 were subsequently able to phonate "a," which they had been previously unable to do.

Inflammation of Pharynx without Ulceration.

2	1, of "606."		Cured.
5	7, of "914."		"
7	2, of "914."		"
9	1, of "914."		Improved.
15	1, of "914."		Uncertain.
16	1, of "606," then 1, of hyposol.		Cured.

Inflammation of Post-Nasal Space without Ulceration, but with Exudation of Mucus or Mucopus causing Deafness.†

3	3, of "606."		Deafness cured.
7	2, of "914."		" "
15	1, of "914."		Uncertain.

† In all these cases of deafness the tuning-fork tests had previously shown middle-ear deafness; no labyrinthine cases are included in this series.

Maxillary Sinusitis.‡

8	2, of hyposol.		Much improved.

‡ The improvement in this case of maxillary sinusitis, however, may have been due to the concurrent irrigation.

Conclusions.—Salvarsan and its allies offer a fair prospect of arresting tertiary syphilitic disease of the bones or cartilages of the nose and throat, syphilitic laryngitis, and non-ulcerative inflammations of the pharynx and naso-pharynx. When repeated injections are not contra-indicated, either by technical difficulties or by unwillingness on the part of the patient, neo-salvarsan is the safest preparation to use.

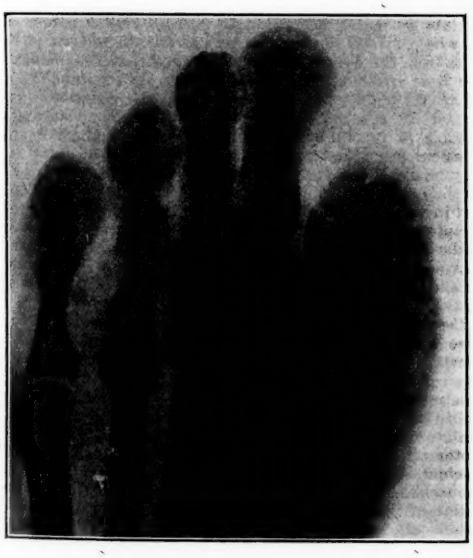
Harley-street, W.

EARLY DIAGNOSIS OF A CASE OF LEPROSY MUCH ASSISTED BY THE X RAYS.

BY THOMAS MILLER, M.D. MANITOBA.

ON Feb. 18th a Chinaman, aged 22 years, came to me complaining of general weakness and inability to work. Questioning through an interpreter elicited merely a history of shooting pains in the left leg, but nothing more definite. On examination of the feet and legs one was at once struck by the shortness of the left great toe, in which there was only the proximal phalanx to be felt, and that half the normal size. The nail was half the usual size and very much retracted. The extremity of the second toe was markedly bulbous. There was no history of ulceration or abscess to account for the loss of the distal phalanx, and it was found that an area of the skin corresponding to the first and second toes and the distal halves of the metatarsal bones on both

FIG. 1.



Left foot: advanced changes.

dorsal and plantar surfaces was slightly thickened and anæsthetic to pain and temperature. There was also a scar, three quarters of an inch in length, on the plantar surface of the great toe at the metatarso-phalangeal articulation, of which no history could be obtained.

A tentative diagnosis of leprosy was made, although no other signs of the disease could be found. The hands are normal.

Two days later Dr. E. S. Hasell, of the Royal Provincial Jubilee Hospital, Victoria, obtained X ray photographs of both feet, and these show most interesting alterations in the bones, confirming the diagnosis of leprosy. Of the proximal

FIG. 2.

Right foot: changes commencing.

phalanx of the left great toe only half remains. The distal phalanx of the second toe has almost disappeared and the distal phalanges of the other toes are also undergoing rarefaction, their shadows being more transparent than normal. The same changes are seen in the heads of the metatarsals. The changes in the right foot are similar, but less advanced.

The left great toe is said to have been decreasing in size during two years, but the patient was unaware of the existence of anæsthesia until I directed his attention to it. Hence, I conclude that the earliest sign of leprosy may be alterations in bones which are made manifest by skiagraphic examination, and therefore venture to put this case on record, as any assistance in the early diagnosis of this so serious disease is of great importance and may help other physicians in difficulty.

Victoria, British Columbia.

INTERNATIONAL COMMITTEE FOR POST-GRADUATE MEDICAL EDUCATION.—A series of lectures on balneology and balneotherapeutics, arranged under the auspices of the International Committee for Post-graduate Medical Education, will take place at Karlsbad from Sept. 28th to Oct. 4th. The list of lecturers includes, among others, Professor Dr. Albu (Berlin), Dr. Dautwitz (St. Joachimsthal), Professor Dr. Falta (Vienna), Privy Councillor Professor Dr. Fleiner (Heidelberg), Professor Dr. Fronz (Vienna), Councillor Professor Dr. Glax (Abazzia), Privy Councillor Professor Dr. Goldscheider (Berlin), Councillor Professor Dr. Grödel (Nauheim), Professor Dr. Hoffmann (Düsseldorf), Councillor Professor Dr. von Jaksch (Prague), Professor Dr. Kionka (Jena), Professor Dr. R. Kutner (Berlin), Professor Dr. Lüthje (Kiel), Professor Dr. Mohr (Halle), Professor Dr. Plehn (Berlin), Professor Dr. Riehl (Vienna), Councillor Professor Dr. Schauta (Vienna), Privy Councillor Professor Dr. A. Schmidt (Halle), and Professor Dr. Strauss (Berlin). The lectures may be attended by medical practitioners on payment of a registration fee of 10 kr. for the entire series. For programme of lectures and cards of admission application should be made to the Kuramt of Karlsbad.

THE DECALCIFYING ACTION OF OXALIC ACID.

ILLUSTRATED BY THREE CASES OF OXALIC ACID POISONING.

BY H. J. B. FRY, M.B., B.CH. OXON., M.R.C.S. ENG., L.R.C.P. LOND.

RECENT physiological research has elucidated numerous facts concerning the part played by the calcium salts in the body processes. It is the object of this paper to endeavour to correlate the phenomena of oxalic acid poisoning with these facts. For Januschke[1] has shown experimentally that the general effects of oxalic acid poisoning are due to precipitation and removal of lime salts from the tissues rather than to a direct action upon the cells of the body as a protoplasmic poison. Hence the rôle of the calcium salts in the maintenance of the organic functions may be inferred from certain of the phenomena in the cases here quoted.

Description of Cases.

CASE 1.—Male, aged 38. The patient was brought to hospital with a history of having taken oxalic acid in a glass of water about three hours prior to admission. The amount taken could not be definitely determined, but was probably about 2 ounces (two pennyworth), since 50 grammes were subsequently found undissolved in the glass. The patient was collapsed. The face was livid, and the extremities were cold and blue. The pulse at times could not be felt at the wrist, but varied in strength and sometimes was just perceptible. The heart sounds were very weak and fluttering. At intervals general convulsive twitching of the muscles of the body occurred. Temperature 97·6° F., pulse 116. Apart from some ulceration of the tongue and pharynx physical examination revealed nothing else of importance. The amount of urine passed was small for about a week after admission and contained much albumin. Large quantities of oxalic crystals varying in size were found microscopically on the twenty-fifth day after admission. There was constipation at the beginning of treatment and the patient complained much of thirst and of dryness rather than soreness of the throat. Vomiting was persistent for about a week. A diffuse papulo-erythematous rash appeared on the ninth day. The rash covered practically the whole surface of the back, extending only to a slight degree on to the arms and anterior surfaces of the thighs. It was of an exudative nature, causing much irritation, and had the general appearance and characters of a diffuse eczema. It disappeared rapidly on exhibition of calcium lactate, 15 grains three times a day, and did not recur. Muscular weakness and marked mental depression amounting to neurasthenia were prominent at a late stage after complete cessation of the acute symptoms, but a good recovery was ultimately made before discharge.

CASE 2.—Female, aged 19. In this instance the patient took threepennyworth of oxalic acid (3 ounces) in a quarter of a pint of milk one and a half hours before admission. The milk curdled on addition of the acid, the full amount of which was taken. The patient experienced no discomfort except dryness of the throat, but half an hour after taking the acid vomited some dark, reddish-coloured fluid. She was able to walk about half a mile to the hospital. There was a tendency towards collapse after admission. The body and extremities were cold and pallid. Temperature 96° F. The pulse showed marked variations in strength, being completely absent at times, then returning to a good volume and tension. Constipation and dryness of the throat were again noticeable, but vomiting was not so marked as in the first case. The patient made a rapid and uneventful recovery.

CASE 3.—Male, aged 64. The patient, a strong heavily built man, stated that he took two packets (? 2 ounces) of oxalic acid about one hour before admission. The face was cyanosed and the skin cold and clammy. There were repeated retching and vomiting of dark reddish fluid. There were no muscular twitchings or convulsions. The pupils were of medium size, reacted to light, and showed no alterations in size. Salivation was not marked. Temperature 97° F. The pulse could scarcely be felt, but varied greatly in strength. The heart sounds were very faint, particularly the first sound. A double aortic murmur was present at the base, accompanied by a presystolic at the apex. The roof of the mouth showed a brownish ulcerated area. Shortly after admission the patient became quite incoherent in his speech and maniacal, struggling violently. There was no general spasm or twitchings of the muscles. The reflexes were normal. The cerebral excitement passed off in a few hours after sleep and was followed by drowsiness. Vomiting and dryness of the throat persisted for about three or four days. There was suppression of urine for about 36 hours after admission. On the third day the urine contained a moderate amount of albumin but no blood. Epithelial débris, pus cells, granular and epithelial casts were present, and a few calcium oxalate crystals were noted. A fine tremor of both hands and twitching of the right arm were noticed on the same day. The pupils were somewhat dilated. The pulse and general conditions steadily improved and a rapid recovery took place.

The phenomena in the above cases which I desire to emphasise as due mainly to the precipitation and removal of calcium salts from the body are as follows:—

Muscular system.—The twitchings of the muscles, either local or general, described above receive a ready explanation from the experiments of Loeb and MacCallum,[2] who showed that muscular twitchings could be produced by salts capable of precipitating calcium in insoluble form, and that the twitchings were prevented by the addition of soluble calcium salts. Moreover, MacCallum and Voegtlin[3] have found that animals after parathyroidectomy show an increased elimination of calcium salts from the body, with consequent deprivation of the tissues, and these animals showed muscular twitchings, rigidity, tremors, &c.—a picture very similar to that seen in the acute stage of oxalic acid poisoning.

The muscular weakness observed in Case 1 after recovery from acute symptoms may be due to the diminution of the Ca factor in the balance between the Ca and K ions of the muscle substance, with a consequent intensification of the action of the antagonistic K ions. Mines[4] has shown that this results in a loss of muscular excitability and contractility.

The cardio-vascular system was markedly affected in all three cases. The fall in blood pressure, cyanosis, collapse, and loss of consciousness may be regarded as consequent upon the loss of tone and functional capacity of the heart muscle due to the washing out of the calcium salts, a well-known effect first established by the experiments of Ringer.[5] But the changes in the strength of the pulse observed in these cases are probably the direct expression of oscillations in the blood pressure due to the removal of lime salts setting up a heightened susceptibility of the sympathetic vaso-motor nerve endings to circulating adrenalin. This increased susceptibility of the sympathetic vaso-motor nerves has been demonstrated by Chiari and Fröhlich,[6] who found that animals which gave the ordinary blood pressure reaction when injected with adrenalin gave a further large rise of blood pressure when injected intravenously with non-lethal doses of oxalic acid, and that this could be counteracted by intravenous injections of calcium salts. These variations in the pulse would presumably be caused by either local changes of vascular tone as the process of decalcification occurred in various parts of the vascular system, or to variations in the tonus of the heart muscle. The alternations in the size of the pupils sometimes seen in oxalic acid poisoning may here be mentioned, as this appears to be another effect of this heightened susceptibility of the sympathetic nerve endings to adrenalin, since Chiari and Fröhlich[6] observed that normal animals gave no reaction if 1 per cent. adrenalin was instilled into the conjunctival sacs, whereas animals poisoned by oxalic acid showed marked mydriasis.

Nervous system.—The condition of cerebral excitement noted above in one of the cases is frequently seen after oxalate poisoning according to Kobert and Kussner,[7] and may be regarded in the same way as due to removal of lime salts from the brain. Sabbatani[8] found that a diminution in the lime content of the brain raised its excitability, and Maxwell[9] obtained muscular movements when the white matter of the motor area was stimulated by substances capable of precipitating calcium, such as sodium oxalate. The neurasthenic condition observed in one of the above cases may be another expression of the irritable weakness set up by the extraction of the lime salts from the nervous tissue, and in this connexion it is interesting to note that the general symptoms of neurasthenia are often observed in cases of oxaluria. The symptoms of peripheral neuritis, to which Sarvonat and Roubier[10] have directed attention in oxalic poisoning, were not observed in any of the above cases.

Cutaneous system.—The exudative erythema observed in Case 1 has not apparently been often observed as an after-effect of oxalic acid poisoning. That the essential cause of this exanthem is due to the precipitation and removal of lime salts from the blood is made clear by the experiments of Luithlen,[11] who found that subcutaneous injections of sodium oxalate increased cutaneous eruptions artificially induced by croton oil, but that subcutaneous injections of solutions of calcium chloride prevented the reaction. Chiari and Januschke[12] consider from their experiments that a diminution of lime in the blood increases the permeability of the vessels and *vice versâ*, while Wright[13] related the urticaria resulting from the injection of serums or after ingestion of vegetable acids to a diminution of lime salts in the blood with consequent serous exudations from the vessels. The value of calcium salts in such conditions has frequently been noted, and they appeared to be of use in the above case.

Urinary system.—The urine can always be found to contain a variable, but usually considerable quantity of calcium

oxalate crystals, so that there can be no doubt about the actual precipitation and removal of calcium from the body by this channel. The large quantity of albumin found in the urine is probably an exudation from the renal vessels similar to that which occurs into the skin, since casts are not frequently found.

Alimentary system.—Though the persistent vomiting which is often a feature of oxalic acid poisoning is sufficiently explained by the corrosive action of the poison on the gastric mucosa, yet it is permissible to suggest that the vomiting is aided by the increased activity of the sympathetic system from removal of calcium salts, since the action of the sympathetics causes mainly dilation of the cardiac orifice of the stomach and contraction of the pylorus (Tigerstedt), a condition which would favour vomiting set up by the direct irritation of the acid. On the other hand, the value of calcium salts in allaying persistent vomiting has long been recognised. The constipation observed in these cases was possibly due to a loss of tone in the smooth muscle of the bowel wall from the same cause mentioned in the case of the skeletal muscles. The medium in which the acid is taken is of some importance, since, if taken in milk, the lime salts therein combine with the acid and the fats act as demulcents.

It is evident from the above that in treatment lime salts must be given not only at the commencement to precipitate the oxalic acid in the stomach, but should be continued in order to restore the salt lost by the process of decalcification. Owing to the slight degree of absorption of calcium salts from the gut, it is advisable to give them with fats, with which they form calcium soaps, these being more readily taken up (Dixon).

Conclusions.—It is probable, then, that the effects of oxalic acid poisoning manifest themselves in almost every system of the body. These general effects are not merely secondary to cardiac depression, but must be regarded as due to a precipitation and removal of lime salts from the tissues. None of the many other theories of the action of the poison accords so well with the facts or can be supported by experimental evidence.

I am greatly indebted to Dr. H. G. Turney, St. Thomas's Hospital, for permission to make use of the notes of the above cases.

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St. Thomas's Hospital, S.E.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Lentz, Director of the Saarbruck Institute for Hygiene and Infectious Diseases, has been appointed Director of the Imperial Health Office, with the rank of Privy Councillor, in succession to Dr. Weber; Dr. A. Bickel has been appointed Lecturer on Experimental Pathological Physiology.—*Breslau:* Dr. Felix Landois has been recognised as *privat-docent* of Surgery.—*Kiel:* Dr. Emmerich, assistant in the Heidelberg Pathological Institute, has been offered the Prosectorship of the Municipal Hospital; Dr. Konjetzny has been recognised as *privat-docent* of Surgery.—*Königsberg:* Dr. Martin Nippe has been recognised as *privat-docent* of Forensic and Social Medicine.—*Leipsic:* Dr. Herbert Assmann has been recognised as *privat-docent* of Medicine.—*Modena:* Dr. Giuseppe Cardi, of Pisa, has been recognised as *privat-docent* of Internal Pathology.—*Munich:* Dr. von Hertling has been recognised as *privat-docent* of Gynæcology.—*Naples:* Dr. Giulio Jafolla has been recognised as *privat-docent* of Physical Therapeutics and Dr. Giuseppe Polito as *privat-docent* of Internal Pathology.—*Rio de Janeiro:* Dr. J. Moreira da Fonseca has been recognised as *privat-docent* of Medicine.—*Salamanca:* Dr. Godoardo Peralta, of Madrid, has been appointed to the chair of Anatomy.—*Tübingen:* Dr. von Korff, of Kiel, has been appointed Prosector to the University Anatomical Institute.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OBSTETRICS AND GYNÆCOLOGY.

Calcified Fibroma Obstructing Labour. — Wertheim's Hysterectomy.—President's Valedictory Address.

A MEETING of this section was held on July 3rd, Dr. AMAND ROUTH, the President, being in the chair.

Mr. H. S. SOUTTAR read a short communication on a case of Calcified Fibroma of the Ovary Obstructing Labour.—Dr. HERBERT SPENCER, Dr. R. DRUMMOND MAXWELL, and Dr. HUBERT ROBERTS discussed the case.

Mr. CHARLES P. CHILDE (Portsmouth) read a paper on Suggestions for the Technique and Performance of Wertheim's Abdominal Hysterectomy. He pointed out that the two conspicuous risks of the operation were shock and sepsis. Certain conditions specially favourable to the occurrence of infection should be recognised: (1) diminished resistance due to bad general health; (2) a certain amount of injury to the tissues of the abdominal wall due to retraction required during the operation; (3) the presence of a pelvic wound open to the external surface through the vagina; and (4) the space of Retzius freely opened, offering favourable position for the accumulation of fluids. In some cases general infection from an ulcerating malignant growth was present at the time of operation. Great care should be taken to avoid fouling of the wound surfaces when the vagina was divided. Mr. Childe's practice was to remove all the soft parts of the growth with scissors and sharp spoon as the first stage of the operation. The raw surface was then freely cauterised and the vagina carefully dried and painted with 2 per cent. iodine in spirit. Finally, the vagina was closely packed with dry sterile gauze, the end of which was left hanging out of the vulva, to be withdrawn when the vagina was divided later. Another important point was the manner of dealing with the pelvic wound. He had entirely given up drainage with gauze as recommended by Wertheim, and he now never employed gauze except for hæmostasis. Mr. Childe laid great stress on securing complete hæmostasis, and on leaving as few ligatures as possible in the pelvic wound. In the easiest cases the operation was severe and prolonged, and shock could best be controlled by shortening the operative procedures as much as possible. The longest part of the operation was dealing with the parametrium and the divided edges of the vagina. He now employed only four ligatures (silk), one for each ovarian and one for each uterine artery. The round ligaments and parametria were crushed with strong forceps and the tissues divided with Paquelin's cautery. Bleeding from the vaginal walls could be avoided by applying a modified Wertheim's forceps to the part to be divided for a moment beforehand. In this way a dry pelvic wound could be secured, and the cautery would destroy cancer cells in the seared tissues. Finally, the peritoneum was sewn over without drainage, and the abdominal wound closed in layers. A ligature or two might be required when separating the bladder. A special crushing forceps designed by Mr. Childe was shown.—Dr. SPENCER, Mr. DOUGLAS DREW, Dr. H. RUSSELL ANDREWS, Dr. ETHEL VAUGHAN-SAWYER, Dr. CUTHBERT LOCKYER, and Dr. H. C. TAYLOR YOUNG (Sydney, N.S.W.) discussed the paper.

The PRESIDENT then delivered his valedictory address, entitled "Observations on the Toxæmias of Pregnancy and on Eugenics from the Obstetric Standpoint," which was printed in THE LANCET of July 12th.

Votes of thanks were passed to the retiring President, to the retiring Vice-President, to the chairman of the pathology committee, to the retiring honorary librarian, and to the retiring honorary secretary, and the section closed for the session.

EDINBURGH OBSTETRICAL SOCIETY.

Fatal Cases of Jaundice in the New-born Child.—Treatment of Eclampsia by Veratrone.—Cæsarean Section at Term for Fibroid in Twin Pregnancy.—Twisted Ovarian Cyst.

A MEETING of this society was held on June 9th, Dr. J. HAIG FERGUSON, the President, being in the chair.

The following were elected honorary fellows of the society: Sir Francis H. Champneys, Bart., London;

Professor James C. Edgar, New York; Professor Jean Fabre, Lyons; Professor Wilhelm Nagel, Berlin; and Emeritus Professor W. Stephenson, Aberdeen.

Dr. JOHN MCGIBBON read a paper on Fatal Cases of Jaundice in the New-born Child, with Notes of a Series in Successive Pregnancies. He referred to the more usual forms of icterus neonatorum, and especially dealt with a form of jaundice which was generally fatal, and which was associated with somewhat extraordinary changes in the blood, the essential features of which were a great reduction in the number of red cells in the blood and the presence of large numbers of normoblasts and megaloblasts. The disease had been described under various names, such as hereditary icterus and congenital familial jaundice. The majority of cases died within a week, some lived a few weeks, and occasionally an infant whose blood had shown all the characteristics of the disease recovered completely. Many infants who died with jaundice before modern methods of blood examination came into vogue were probably true examples of the disease. Isolated cases had been reported, but the majority had been members of the same family. Dr. McGibbon then gave short details of a series of cases. The mother had had six pregnancies, all of which went to full term except one, which terminated at the eighth month. *First pregnancy:* A male child born in September, 1902, with no jaundice, and never showing any trace of such. Now a healthy strong boy aged 10 years. *Second pregnancy:* A male child born in October, 1904, with jaundice, but recovered, and is now a strong, healthy, well-developed boy aged 8 years. At birth the entire body was a pale lemon tint which deepened next day. The spleen was much enlarged. A blood count of blood films showed the features characteristic of the disease. *Third pregnancy:* A female child born in April, 1906, full time, and well developed; jaundice well marked at birth, becoming rapidly profound. The spleen was enlarged and urine bile-stained. The child was in a very drowsy condition and died on the fifth day. Many blood films were taken which showed the same features. *Fourth pregnancy:* A female child born on July 20th, 1907, full time, and well nourished. Jaundice at birth, slight but distinct. The spleen was enlarged. The child had an umbilical hæmorrhage and died on the seventh day. Blood films showed the same changes. *Fifth pregnancy:* A female child, but stillborn, in December, 1909, at the eighth month. Jaundice well marked over the entire body. *Sixth pregnancy:* The last which this woman has had, delivery taking place in January this year. Child jaundiced. The spleen was enlarged. Died suddenly on the third day. No umbilical hæmorrhage on this occasion. The main changes in the morbid anatomy were as follows: small hæmorrhages under the peritoneum and in the lungs. The liver showed a great increase in the size of the islands, where blood formation was in progress. In two cases there was an increase of the connective tissue, and in one there was distinct blockage of the common bile duct at its entrance into the duodenum. The thymus and lymphatic glands showed active proliferative changes. The thyroid showed an increase of fibrous tissue, and Dr. A. H. Buchan and Dr. J. D. Comrie found an entire absence of colloid material. The kidneys showed some cloudy swelling only. The suprarenals were enlarged and also the seat of cloudy swelling. The pathology was obscure. The toxic theory was difficult to accept, because one would expect to find more pronounced changes in the kidneys. In the series of pregnancies which came under Dr. McGibbon's observation the mother was entirely free from any symptoms suggestive of anything toxic. So far as the series of cases under consideration was concerned there was not the slightest evidence of syphilitic taint, nor was there anything in the obstetric history suggesting syphilis. A recent Wassermann test of the mother's blood brought the report of "slightly positive." This, however, required further investigation. The most recent view appeared to be that this type of jaundice was due to some undue fragility of the red cells, whereby they became broken up by slight causes. The diagnosis could only be made by blood counts and blood films. The following points may be said to be established in congenital familial jaundice—viz., (1) It tends to affect several members of one family; (2) its essential features are jaundice visible at birth or becoming apparent within 24 hours, an enlarged spleen, and profound anæmia; and (3) syphilis as an etiological factor cannot be excluded as yet, but there is no evident connexion.—Dr. JAMES RITCHIE referred to a patient who had given birth to 11 children with no miscarriages. All the infants were born at term and were well nourished and healthy, but they all became jaundiced on the second or third day, and with the increase of jaundice they became anæmic. Four of them died from intense anæmia; the second lived only a few days; the seventh, who had also umbilical hæmorrhage; the eighth died on the thirteenth day; and the ninth on the eleventh day. Three others were seriously ill for about 14 days, but recovered. As to the causes of icterus neonatorum, he said it was ordinarily accepted that (1) in milder degrees it was due to changes in the circulation of the liver at birth with increased hæmolysis; (2) obstruction of bile ducts and an increased hæmolysis; (3) septic infection from the stump of the cord; (4) in syphilitic cases it might be due to interstitial hepatitis; (5) in Winckel's disease it might be due to hæmoglobinuria; and (6) in Buhl's disease there was fatty degeneration of all the tissues, the cause being probably sepsis. In his (Dr. Ritchie's) cases there was no suspicion of syphilis. In one of the cases the mother was very deeply jaundiced at the birth of one of her children. These cases occurred before the days of blood examination. There was a post-mortem examination on one infant, and enlargement of the liver and spleen was present with a large amount of free iron in the liver.—Dr. J. W. BALLANTYNE said that the most probable view seemed to be the toxæmic one due to the passage of toxins from the mother. The prenatal cases were probably the result of a toxin in the mother. If a toxin was circulating in the mother the first part of the infant to be attacked would be the liver from the blood in the umbilical vein. In some of his (Dr. Ballantyne's) cases the mother had a threatening of hyperemesis in the early months of pregnancy, and that was regarded as a toxæmia. He had tried calcium chloride with benefit in a mother who had several children that had developed jaundice.—The PRESIDENT mentioned a case where the first two children died from jaundice—one at a week and the second at two weeks after birth; the third was alive, and the fourth had died. He agreed with the view that these cases of jaundice were septic. Since adopting the method of Fabre (of Lyons)—namely, dressing the cord with absolute alcohol—he had found fewer cases of jaundice.—Dr. MCGIBBON replied.

Dr. F. W. N. HAULTAIN read notes on the Treatment of Eclampsia by Veratrone. Knowledge of the pathology of eclampsia, he said, was scant and imperfect and necessarily treatment was inefficient. Increased blood pressure seemed to be present in every instance. This was usually, though not invariably, associated with increase of the pulse-rate. This high vascular tension, whatever its cause might be, had much to do with the convulsive seizure, and much of the treatment recommended had been on the lines of its reduction. Blood-letting, thyroid extract, and the nitrites probably owed such little success as they had to this. Veratrum viride had been used with considerable benefit and was considered as a specific by some of the older authors. The tincture was impossible to administer by the mouth, and it irritated if given hypodermically. Messrs. Parke, Davis, and Co. had introduced veratrone, a hypodermic preparation of the essential alkaloids contained. Its paramount action was a vascular depressant, though it was also said to be a spinal sedative, a combined action which seemed ideal for the treatment of eclamptic seizures. It was made up in 1 c.c. ampoules and intramuscularly gave rise to no local untoward effects; its action was rapid. Dr. Haultain detailed seven cases of eclampsia treated with veratrone. The first case was that of a primipara who had two fits shortly after delivery. The urine was very scanty and solid on boiling. The blood pressure was 160 and the pulse 106. 1 c.c. of veratrone was injected. In 30 minutes the blood pressure was 120 and the pulse 75; in 70 minutes the blood pressure was 105 and the pulse 50. No further fits occurred. The only other treatment was a hot pack. Recovery. The second case developed fits shortly after delivery. Morphia was given repeatedly until 2 gr. were administered hypodermically, yet the fits continued. There were 11 fits in all. The patient's blood pressure was 160 and the pulse 94; urine solid. 1 c.c. of veratrone was given, and in 40 minutes the blood pressure was 104 and the pulse 60. No further fits occurred. The other five cases were detailed. In all there was marked and rapid diminution

in the blood pressure and pulse-rate after the use of veratrone, and the fits were inhibited while the vascular tension was low. The pulse would seem to indicate in a general way the diminution in pressure, and it might be assumed that a pulse of 60 or below indicated a tension consistent with safety. So far as could be learned, veratrum viride was not a dangerous poison, and could be given with comparative safety till the pulse fell below 50. It should also be noted that its action was somewhat evanescent, and the patient therefore must be carefully watched in case of a return of high pressure and subsequent fits, as was exemplified in three of his cases. One case was a woman six months pregnant in her second pregnancy; she had six fits and was treated with veratrone. This reduced her blood pressure, but in three hours it again rose with the occurrence of three fits, when another injection was given; the blood pressure was reduced and no more fits occurred. The urine in four days became clear of albumin and the patient's labour was now expected daily. The cause was here successfully combated. Such cases required most careful dieting and watching as regarded the return of the albuminuria. In treating eclampsia he (Dr. Haultain) had after a prolonged trial entirely discarded morphia. Blood-letting was a good vascular depressant, but the subsequent injection of salines seemed to do away with the good previously acquired. Chloroform would appear to act as a poison similar to that considered to be the cause of eclampsia and was dangerous. Beyond the hot pack to induce sweating, and washing out the stomach and at the same time leaving in it from 4 to 6oz. of salts, he used no other form of treatment in the cases recorded.—Professor R. G. MCKERRON (Aberdeen) said that he had given up veratrum viride long ago; he had given morphia of late.—Dr. A. H. F. BARBOUR said that his results had not been so good as regards the convulsions. He agreed there was nothing more remarkable than the extraordinary effect veratrone had in bringing down the pulse-rate and blood pressure, but this effect was transient.—Dr. J. LAMOND LACKIE said that the results were very striking. It was the convulsions that did harm, leading to other troubles, and anything which would control the convulsions was on the right lines. Veratrum viride was a very marked nerve sedative, and if the nervous system was irritable it was more liable to seizures. Veratrum viride might cause fainting if continued for a few days with a fall in the pulse-rate. He had found this in a case where it was given in the pre-eclamptic state. The patient passed through labour without any fits.—Dr. H. OLIPHANT NICHOLSON said that veratrum viride slowed the pulse by prolonging the ventricular contractions, and it lowered the blood pressure. It might if prolonged produce heart block. It was a dangerous drug to push too far. The blood pressure fell with a slow pulse; ordinarily with a slow pulse the blood pressure was high. It acted differently from morphia and thyroid extract, which acted as dilators. Dr. Haultain had mentioned that the urine was increased rapidly. That was the essential thing to treat in eclampsia. He himself felt disposed to try veratrone.—Dr. HAULTAIN, in reply, said that veratrum viride was not a dangerous drug if given for one or two days till the pulse was down to 50; he had seen the pulse down to 44 with it. He thought it probable from its physiological action that the drug had a considerable future before it. He had found the blood pressure after injection rise in one case in two and a half hours, in others about three hours.

Mr. E. W. SCOTT CARMICHAEL read notes on a case of Cæsarean Section at Term for Fibroid in a Twin Pregnancy. He said that these cases were comparatively rare. Pinard, Spence, Donald, and others, had shown how relatively numerous fibroid tumours were in the pregnant uterus and how relatively uncommon surgical interference was required. The patient was 42 years of age and a primipara, and was seen at the fifth month of pregnancy for severe attacks of abdominal pain. She was found to have the pregnancy complicated with two fibroid tumours. A tumour of the size of an apple, pedunculated and intensely tender, was attached to the fundus, and another in the lower uterine segment encroaching on the cervix. The first tumour was removed at the sixth month, and it was advised to allow the pregnancy to go to full time and perform Cæsarean section as the close proximity of the lower tumour to the cervix and pelvic brim rendered the probability of labour terminating naturally as very unlikely. The Cæsarean section revealed twins with distinct placentæ. Supravaginal hysterectomy was performed, considering the age of the patient and the position of the remaining fibroid. The twins, strong and healthy, weighed 5 lb. and 4½ lb. respectively. Only one other case of twin pregnancy in which Cæsarean section was performed had been recorded. Mr. George Robertson, of Dunfermline, performed that operation for eclampsia, and the mother and children survived.

Mr. SCOTT CARMICHAEL also read notes on a case of Twisted Ovarian Cyst causing Strangulation of the Pelvic Colon and Intestinal Obstruction. The patient was six months pregnant and had been seized with severe abdominal pain and increasing distension of the abdomen. She had not passed fæces for two days and no passage of flatus for 24 hours, and was suffering from spasms of severe pain. A high-reaching enema gave no relief. Operation revealed the large intestine of a dark purple colour and greatly distended. This was punctured by means of a trocar and cannula. The strangulated intestine proved to be the pelvic colon of unusual length, caused by an ovarian cyst, which was also plum-coloured and had a long pedicle. The pedicle was twisted one and a half times on itself and encircled completely the base of the intestinal loop and constricted it. The intestine after relief began to resume a more normal appearance, so it was returned into the abdominal cavity. The patient recovered from the operation, but on the sixth day labour supervened, and the child only survived eight hours. The patient did well except for some mucous colitis.

BRITISH OTO-LARYNGOLOGICAL SOCIETY.—A meeting of this society was held on July 16th, Dr. Frederick Spicer presiding.—Dr. Percy S. Jakins exhibited the following cases: (1) A man, aged 24, with a Plum-coloured Growth on the Left Vocal Cord; (2) a girl, aged 22, with a Small Sessile Growth upon the Left Vocal Cord; and (3) a woman with Perforation of the Nasal Septum and Extensive Specific Ulceration of the Tonsils and Fauces, healing rapidly under treatment by "606."—Dr. Spicer said with regard to Case 1 (vascular laryngeal growth) that before making a definite diagnosis of its nature he would like to remove a portion and examine it microscopically.—Dr. H. D. McCulloch mentioned a case of papilloma of the larynx which was ultimately considered to be malignant, but which disappeared under treatment by ultra X rays. There had been no recurrence of the growth.—Mr. Charles Heath and Mr. J. Walker Wood concurred in the opinion that the diagnosis should be cleared up in the way Dr. Spicer suggested, but that if the growth were obviously innocent it should be removed by the indirect method.—Mr. Heath, in discussing Case 3 (specific ulceration), said from its appearance he had no doubt that the faucial ulceration was rapidly healing under treatment. The nasal septum, however, was showing less evidence of repair, and this was doubtless due to the non-vascular structure of the cartilage. — Dr. McCulloch exhibited four cases of Extreme Deafness (labyrinthine) showing improvement by treatment with the ultra X rays. — Dr. Spicer expressed himself as deeply interested at the results so far obtained in such hopeless cases; he would be glad to know more about this treatment.—Mr. Walker Wood said that in reference to the cases shown by Dr. McCulloch, he had personally examined and tested them before treatment and again three months later, after treatment. There was an undoubted improvement, and although it was but slight it was encouraging. He hoped on a subsequent occasion that Dr. McCulloch would contribute a paper to the society explaining his views of the nature and action of these ultra X rays.—Mr. Heath was also much interested in the cases which had been exhibited by Dr. McCulloch, and said that if the improvement in the hearing was not great it was unmistakable. This was a class of deafness which had not hitherto been relieved by any form of treatment, and if the X rays, utilised in this manner, were likely to be effective, the sooner the fact was known the better. He gathered that Dr. McCulloch had been giving attention to this form of treatment since 1908, and had read some of his publications on the subject in 1909 and 1910. Possibly at another meeting of the society Dr. McCulloch might be willing to read a paper upon this treatment, when it could be more fully discussed, and when there might be more cases available upon which to form

an opinion of its merits.—Mr. Heath showed: 1. A case of Aural Suppuration of 40 years' duration in one ear and 38 in the other, with an interval of two years between the operations. There had been complete recovery, with excellent hearing on each side, after conservative mastoid operations by the method devised by the exhibitor of the case. 2. A case of Chronic Aural Suppuration of two years' duration with cholesteatoma in both ears (specimen shown), with perfect restoration of structure and function in each ear after conservative mastoid operation by the exhibitor's method.—Dr. Spicer congratulated Mr. Heath upon Case 1, and said the ears of this patient were the most satisfactory results of mastoid operations he had ever seen. With regard to Case 2, the result of operation showed how much advance there had recently been in the treatment of chronic aural suppuration; not long ago a patient such as this would have undergone the radical operation.—Dr. Pullin drew attention to the cosmetic effects of these two cases of double mastoid operations, and congratulated Mr. Heath upon the results.—Mr. Heath, in reply, said, with regard to the case of 40 years' duration, she was referred to him by Dr. Meggison, who did not anticipate that hearing could be restored, but in the hope that arrest of aural suppuration by mastoid operation might put an end to the severe headaches which had marred the whole life of the patient, whereas the result was that hearing had been restored to 20/50ths and 14/50ths, which was really excellent hearing; the headaches, too, had abated. With regard to the double cholesteatoma case, prior to the introduction of the conservative mastoid operation in 1906, Mr. Heath, too, would under such conditions—as Dr. Spicer had stated—have performed radical operations, and this patient would now be more or less deaf, whereas at present her hearing was more acute than the average girl of her age.—Mr. Walker Wood showed a Set of New Instruments used in conjunction with the Naso-pharyngoscope for the direct treatment of the Eustachian tubes.—Mr. Heath also exhibited several new instruments.—Dr. James Harper (Glasgow) read a paper on a New After-treatment of Intranasal Operations.

Reviews and Notices of Books.

Applied Pathology in Diagnosis and Treatment. By JULIUS M. BERNSTEIN, M.B., D.P.H., M.R.C.P., Assistant Physician to the West London Hospital, &c. London: The University of London Press. H. Frowde and Hodder and Stoughton. 1913. Pp. 395. Illustrated. Price 10*s.* 6*d.* net.

THE rise of clinical pathology has been one of the outstanding phenomena of the progress of medicine since the opening of the twentieth century. The exact status of those who practise it and the exact relation of this new science to pre-existing specialties are still not finally settled, in spite of serious debate upon these topics by several of those who delight in looking into the future of medical evolution and in seeking to direct the lines along which advance shall take place. The most philosophical and original section of Dr. Bernstein's book is the first chapter, wherein he expounds his own views on these points, about which he has evidently done some hard thinking. To begin with, he sees quite clearly that clinical pathology is, and will almost certainly remain, an adjunct to clinical medicine, not a substitute for it. No clinician is likely to dispute this view, and, indeed, it is only the youngest of bacteriologists who are apt to overlook it. He proceeds to express the belief that laboratory technique can be, and ought to be, handed over mainly to the skilled laboratory assistant, and to protest against the view that the trained and qualified clinical pathologist should spend his time cutting sections and counting leucocytes. Here, again, we think he is right, though a good many physicians may not agree. He is thus led to anticipate the day when the general practitioner will call into consultation not the present-day type of consulting physician, but a new breed of "physician-pathologist."

Certainly a transitional period is being passed through just at present. The general practitioner hears much of this "reaction" and that, of vaccines, hormones, and many other applications of organo-therapy. For the great majority of patients these aids to diagnosis and treatment are out of the question on the score of expense, unless, that is, the patient is in such circumstances as to be a legitimate candidate for a voluntary hospital. Apart from that, it is extraordinarily difficult for a man in general practice to sift the permanently valuable from the ephemeral of these complicated processes. He ends, sometimes, by distrusting them all; or, if his patients are willing, by adopting in turn each new fad, and neither course is right.

The author of this book seeks to do the conscientious practitioner, who has not time or training to enable him to discriminate for himself on matters of bacteriology, the service of summarising for him the value, the meaning, and the limitations of all the various investigations which the clinical laboratory now undertakes. He does not enter at all into the questions of technique, rightly judging that this want is well supplied already, and that the information would be useless to the readers for whom the book is designed. The task thus set is carried out in a very thorough and painstaking way. Throughout it is obvious that the author draws upon extensive personal experience, and is not content merely to echo the opinions of others. A tinge of the dogmatic is thus introduced, which in the circumstances is both necessary and advantageous. The whole tone of the book is practical, and as a summary of up-to-date knowledge in this branch is thoroughly trustworthy. There are, it is true, small points upon which clinicians would oppose the author's views. To give an instance, the hourly blood-count recommended in appendicitis is neither practicable nor sound in our personal judgment. Many observers, we fancy, would object to the distinction drawn between "physiological glycosuria" and the graver forms of disturbed carbohydrate metabolism. But these are minor details which scarcely detract from the high opinion we have formed of the book as a whole. There are far too many misprints, however; the most glaring is that which directs the intravenous injection of salvarsan in 300 ounces of solution.

The Rationale of Punishment. By HEINRICH OPPENHEIMER, D.Lit., LL.D., M.D. University of London Press. 1913. Pp. 827. Price 10*s.* 6*d.* net.

Dr. Oppenheimer's work is the first volume in a new series of Monographs on Sociology to be issued under the joint editorship of Professor L. T. Hobhouse and Professor E. A. Westermarck, and, as is indeed implied by its appearance under such distinguished auspices, is an able and learned contribution to the study of the problem of which it treats.

The book is divided into two sections, the first discussing the origin of punishment and the second dealing with the various philosophical theories that have been advanced to explain its aims and its utility. Considered in its historical aspect, punishment as a social phenomenon has its source, according to Dr. Oppenheimer's view, in the collective sentiment of fear. This is to be inferred from the fact that the first acts punished as crimes appear almost invariably to have been such as imperilled, or were supposed to imperil, the safety of the community, especially by exposing it to the vengeance of the spirit world. We have evidence of this attitude in the constancy with which witchcraft is treated as criminal in primitive societies, and also in the special heinousness so frequently attributed to sexual misdeeds as being of a sacrilegious character. Revenge, on the other hand, would seem to be the source solely of civil justice, which remains quite distinct from criminal justice until that comparatively late period when it has come to be an accepted idea that an

injury done to the individual is *per se* an injury to the State of which he is a member. From this consideration of the origin of punishment the author proceeds in the second half of his book to an analysis of its philosophy. After a critical examination of the several transcendental and political theories on the subject, he concludes with a modified acceptance of the doctrine of Anselm von Feuerbach, who maintained as the basis of his system the principle that legal punishment is the juridical, and in sound communities the inevitable consequence of a violation of the law, the threat of punishment being designed to prevent such violations, and its infliction being the proof that the threat is real.

Dr. Oppenheimer does not explicitly set forth his view as to the mutual relation of his historical and his philosophical conclusions, but it may be assumed from the very fact of his combining these two methods of inquiry in the same volume that he regards them as of like effect in lending support to the conservative attitude which he apparently adopts in regard to this problem. This supposition is confirmed by the concluding chapter of the work which is devoted to a criticism of what the author describes as "the modern doctrines of criminology." The connexion of this chapter with the rest of the book is, except from this point of view, rather difficult to understand, nor is its necessity in any wise very obvious; its argument is superficial and irrelevant, and fails to do justice either to the theories criticised or to the author's dialectical abilities. In reality the doctrine of social defence, which is the fundamental thesis of the criminologists whom Dr. Oppenheimer attacks so vigorously, is in essentials entirely compatible with the juridical principles laid down by von Feuerbach as the basis of his theory of punishment, and it is equally consistent with what we know of the origin of punishment and its influence in the history of the race. It is to be regretted that this very admirable volume should close on a note of needless controversy, and rather a false note at that.

Diseases and Injuries of the Eye. By WILLIAM GEORGE SYM, M.D. Edin., F.R.C.S. Edin., Ophthalmic Surgeon, Edinburgh Royal Infirmary. London: Adam and Charles Black. 1913. Pp. 493. Price 7*s.* 6*d.* net.

THIS book follows the familiar lines of the "text-book for students and practitioners," but is more characteristic of the personality of the author than is frequently the case. He is a man of strong views, but as he says in the preface "in certain instances, in which I could hardly avoid doing so, I have given frank expression to my own views, but as a rule I have given prominence to the generally accepted opinion." We may say at once that the book is a useful introduction to the subject for those for whom it is intended, as was only to be expected from one of wide experience obtained in so important a centre as Edinburgh. If we seem to cavil at some of Dr. Sym's statements it is because amidst a plethora of students' manuals we think that a very high standard should be reached by a fresh competitor.

The ordinary sequence is observed in the treatment of the subject, with the addition of two useful chapters on medico-legal questions and the nursing of ophthalmic patients. On p. 13 the minimum visual angle is stated to be one second instead of one minute. We warmly commend the advice not to treat the symbols $\frac{6}{9}$, $\frac{6}{12}$, and so on, for visual acuity as vulgar fractions. We do not agree that retinoscopy can be performed at 8 or 10 feet "quite well." Dr. Sym's remarks on the unnecessary use of mydriatics in determining refraction represent, we believe, the somewhat strongly held opinion of Edinburgh ophthalmologists. In opposition to many others we agree with his remarks, but only in so far as they apply to experts of considerable experience. Hence we think it unwise that they should find a place in a student's manual. The beginner will often be led astray if he does not dilate the pupils. A chalazion or tarsal cyst is not a "cyst by retention" (p. 86). On p. 174, *apropos* of breaking down iritic adhesions by the alternate use of atropine and eserine, we read "such procedure comes perilously near to malpraxis." If it had been stigmatised as extremely foolish we should have agreed, but malpraxis, where no permanent harm is likely to accrue, is too strong a term. On p. 302 we read: "It has actually been suggested that in a case of doubt one might apply a mild mydriatic, which would leave the iritis patient uninfluenced, but would increase and emphasise the glaucoma. Such procedure is utterly unjustifiable." In common with many others we disagree. There are cases of this type of the greatest difficulty for even the most experienced. If the balance of evidence is in favour of an iritis it is surely a wiser precaution to use homatropine, which in the event of error can be counteracted by eserine, than boldly to plunge with atropine, which in case of error will necessitate operative interference at a peculiarly unfavourable moment for operation.

Few pathologists will agree with these remarks on senile cataract: "Hard or senile cataract is that form in which the nucleus, having, as the patient became older, separated itself off from the cortex more and more completely, has undergone further changes and become not merely hard but opaque as well" (p. 186). "..... in all cases above middle life cataract must be cortical and nuclear." Prolapse of iris is not mentioned as a post-operative complication of cataract extraction.

There are other points of less importance which we have noted as inaccurate, but it would give a wrong impression if we dwelt unduly on these defects. There are available safer guides for the student than this book in its present state, but with careful revision it would exactly answer the requirements of those preparing for the ordinary qualifying examinations. The author's literary style is more picturesque than we care to see in a scientific text-book. It is at times stilted, at others colloquial—e.g., "the eager epithelium," "less fatally affected," the pneumococcus "lying in wait ready to spring," and so on. The printing and illustrations are good.

The Vertebrate Skeleton. By S. H. REYNOLDS, M.A. Second edition. Cambridge: University Press. 1913. Pp. 535. Price 15*s.* net.

THIS, the second, edition of a very useful handbook has been brought up to date and partly rewritten by the author and by Professor Williston. Its improvement over the first edition is further marked by the inclusion of a number of new illustrations from contemporary works, such as Mr. Goodrich's treatise upon fishes in the "Oxford Natural History" and Dr. Smith Woodward's "Vertebrate Palæontology." We have thus before us a very comprehensive, though in parts rather condensed, account of the main facts of osteology. The amount of matter to be drawn upon in this department of zoology is enormous, for not only the older authors, but many of more modern date have accumulated a vast store of osteological detail; thus condensation became obviously necessary. We do not find, however, that the authors have omitted points of first-rate importance, though here and there, as is inevitable, some details have been passed over. The existence of intercentra, for example, is so characteristic of certain groups of vertebrates that it might have been mentioned that these bonelets are to be found in the caudal region of the vertebral column of birds, but we cannot find any reference to this fact. Perhaps, also, some reference might have been made to the osteology of the Antarctic whale, neobalæna, which is so remarkably intermediate between the rorquals on the one hand and the right-whales on the other. There are a few

other points which we have noticed where recent work has not been dealt with. It would be unfair, however, to press this criticism, since the authors have managed to include so much in their handy volume. We feel grateful for what they have put before us rather than regretful for what they have not.

Researches on Irritability of Plants. By JAGADIS CHUNDER BOSE, M.A., D.Sc., C.S.I., Professor, Presidency College, Calcutta. With 190 illustrations. London: Longmans, Green, and Co. 1913. Pp. 376. Price 7*s.* 6*d.* net.

THE works of Dr. Bose on "Plant Response" and "Comparative Electro-physiology" are well known both to physiologists and botanists. In the present volume the author has improved on the methods described in his volume on "Plant Response" published some seven years ago. To one familiar with nerve-muscle physiology it almost seems as if one was reading the results obtained on animal tissues. His researches show the wonderful similarity between the irritability of plants and animals.

The investigations were carried out chiefly on mimosa, desmodium, and allied "sensitive plants," although the author regards a sensitive plant as differing from others only in the possession of mobile mechanism by which excitatory change of form is manifested by a conspicuous movement. Beginning with what he calls "plant scripts"—i.e., the records of the movements of the leaf of Mimosa pudica—he finds that the ordinary graphic method is not sufficiently delicate. To record such movements he has invented what he calls a resonant recorder which gives a discontinuous or intermittent record instead of a continuous record or contact. Practically, the author has applied to this plant all the methods usually applied to animal tissues—nerve and muscle—and with in many respects the same result. As in skeletal muscle, so in the pulvinus of mimosa, the break induction shock is more effective than the make. The latent period of a vegetal "twitch" is one-tenth of a second, the maximum contraction is attained in three seconds, and the recovery completed in 15 minutes. Ineffective stimuli are summated; the effect of load, temperature, and many other conditions, such as fatigue, different gases, are much the same as on skeletal muscle. The responses under certain conditions exhibit a "staircase" increase. The "death spasm" in plants is comparable to the effects of heat on animal protoplasm. The whole physiology of the motile response from the pulvinus of the plant is very like that of motile response in the case of an animal.

Next the author deals with the velocity of a transmitted impulse, and the highest value in the petiole of mimosa he finds is 30 mm. per second. The excitation is transmitted in both directions, though the velocity is not necessarily the same in the two cases. As to the character of the transmitted impulse or excitatory state, the author shows by experiment that the prevailing belief that it is hydro-mechanical—a view largely based on experiments by Pfeffer and Haberlandt—is not the true explanation. It is a true excitatory state, which can be "blocked" by various physiological means as in a nerve. A very full account is given of the polar effects of elecrical currents of various strengths. The author finds that "with feeble currents the kathode excites at make and not at break. The anode excites at neither make nor break. With moderate intensity the kathode excites at make and not at break. The anode excites at break and not at make." So that the results in diverse sensitive plants are in every way similar to those in animal tissues. Most interesting are the contrasted effects of anode and kathode in the pulsating activity of Desmodium gyrans. In biophytum the characteristics of response are like those of cardiac muscle—a long refractory period and response on the "all-or-none" principle. To botanists the account of the pulsating leaflet of Desmodium gyrans will be particularly interesting. These slow jerking movements can be maintained uniform in a twig severed from the parent plant for a long time by subjecting it to internal hydrostatic pressure. The movements may be compared to the "systolic" contraction and "diastolic" relaxation of the motile organ. The effects of load, ligature, and chemical agents on these automatic movements are next considered. Ligature arrests them in "diastole" just as a Stannius ligature does the heart.

This is a most interesting, suggestive book, and we agree with the author that the study of responsive reactions in plants must be regarded as of fundamental importance in the elucidation of various phenomena relating to the irritability of living tissues. We commend the perusal of these "Researches" to botanists and physiologists alike.

Physiologie des Menschen und der Säugethiere. Von Dr. RENÉ DU BOIS-REYMOND, a.o. Professor, Abtheilungs-Vorsteher am Physiologischen Institut der Universität zu Berlin. Dritte Auflage mit 139 Text-figuren. Berlin: A. Hirschwald. 1913. Pp. 647. Price 14 marks.

THE work is divided into two parts. The first part (pp. 1–323) deals with metabolism in the broad sense—i.e., with changes of matter—and the second part (pp. 324–638) with the activities of the animal body. The author considers first the circulation, then in turn respiration, digestion, absorption, excretion, and foodstuffs. Under blood the account of its proteins seems to us rather meagre, and, moreover, nowhere do we find a composition table setting forth the chemical constitution of the blood as a whole or even of the plasma itself. We cannot say that the two figures meant to illustrate the valves in systole and diastole of the heart are very illuminating. No figure of any form of kymograph appears to be included, nor is there a figure of a blood-pressure tracing to be found in the short chapter on "Blutdruck," or blood pressure. What is the student then to make of the Traube-Hering waves, referred to in p. 61? *Per contra*, to the elaborate and now little employed respiratory apparatus of Regnault and Reiset and that of Pettenkofer much space is given. In place of these we should have preferred to see a fully illustrated account of the modern methods of measuring the blood pressure in man. Altogether about 126 pages are devoted to blood, circulation, and respiration. It can hardly be correct to say that the "inorganic salts" (p. 131) leave the body in the same form as they enter it. The chapter on digestion is interesting, and details of the differences between the digestive mechanism in carnivora and herbivora are given, though we failed to find any reference to the use of X rays in the study of the movements of the intestinal canal. The short account of digestion in the stomach in different mammals is both interesting and suggestive. It appears that during rumination only the parotid glands secrete, and secrete most copiously. The comparative physiology of digestion is one of the best series of chapters in the book and is well worth perusal by the student of human physiology. Absorption and lymph formation lead on to the blood as the intermediary, or internal medium of the inner metabolism. This brings the reader to blood formation and internal secretions. We failed to find any reference to the parathyroid, and the author, while indicating the effects of injecting adrenalin into the blood stream, omits to mention the very temporary rise of the arterial blood pressure that it causes, while nothing is said of the analogous action of an extract of the hypophysis. A good account of the urine in mammals is

given, but the figure of a kidney (Fig. 47), copied from Owen, should be replaced by another or not reinserted. Taking it all in all, no doubt the treatment of metabolism is sufficient to meet the requirements of those students for whom the book is especially written.

To the subject of special muscular movements the author has devoted much study. The exposition of motion and locomotion in man and animals may be especially commended. Without illustrations we fear it will be difficult for the average student to make much of such subjects as Pflüger's law and conduction in nerves and in the cord. Too little is said about the "knee-jerk" and the conditions on which it depends. When dealing with cerebral localisation, an old figure by Obersteiner, showing motor areas on both the ascending frontal and parietal convolutions, is inserted. Would not Sherrington's well-known illustration be more satisfactory? Most of the remainder of the text is taken up with the sense organs, of which a short but adequate account is given. The author, though he explains the word "receptor," does not use it so extensively as it is used in the latest English text-books.

However, taking the book all round, apart from some of the shortcomings we have indicated, it is well written and fairly balanced in the treatment of the complex series of events that go to make up what is called the physiology of man and mammals. We should state that the reader is not distracted by the introduction of many names of observers. The introduction of a few historical dates of important physiological discoveries as landmarks might prove of value.

Trial of George Henry Lamson. Edited by HARGRAVE L. ADAM. London and Edinburgh: William Hodge and Co. Pp. 192. Price 5*s.* net.

THIS volume forms one of the series known as "Notable English Trials." The trial of George Henry Lamson is of particular interest to the medical jurist, inasmuch as it was the first case, so far as was known, in which the poison aconitine was used for homicidal purposes.

The volume has been admirably compiled from official Old Bailey Sessions Papers and the contemporary newspaper reports. As will be remembered, Lamson was tried and executed for the murder of his brother-in-law, Percy Malcolm John. It was proved beyond doubt that the deceased had died from the effects of a vegetable poison acting on the stomach and nerve centres. The poison was detected in the viscera and in the urine. At that time considerable difficulty existed in testing for vegetable poisons. Moreover, aconitine was a somewhat unknown substance, its properties and effects upon the human system not being exactly familiar to the medical faculty. Dr. T. Stevenson and Dr. T. Bond made important tests, principally by taste. They applied some of the alkaloid obtained from the body to their tongues, and a "biting and numbing effect" was produced; a precisely similar effect was obtained by a similar application of aconitine. They also made subcutaneous injections of the vomit into mice, so causing the death of the animals. Curiously enough, a description of the symptoms of poisoning by aconitine, similar in all its details to those exhibited by the deceased in his last illness, was found inscribed in a kind of pocket-book belonging to the prisoner. Also the latter's purchase and attempts to purchase the poison were clearly proved. There was some doubt as to the precise manner in which the poison was administered; the theory of the prosecution was that it was administered in a capsule, but a more probable vehicle was a portion of Dundee cake which the prisoner gave to the deceased.

Lamson was convicted of a cruel and callous crime, and the mystery of his character is not easy to fathom. At one time he was a "most humane man," but he acquired the habit of administering morphia to himself, and perhaps this might have brought about his moral deterioration. It is beyond doubt that in his later years he said and did things incompatible with complete sanity.

Modern Wound Treatment and the Conduct of an Operation. By Sir GEORGE T. BEATSON, K.C.B., B.A. Cantab., M.D. Edin., Surgeon, Western Infirmary, Glasgow, and Senior Surgeon, Glasgow Royal Cancer Hospital. Edinburgh: E. and S. Livingstone. 1913. Pp. 106. Price 2*s.* net.

WE are told by the author that this small handbook on the modern treatment of wounds is primarily the outcome of gratitude and reverence to Lord Lister, and that it is intended to give an account of the principles of the methods of treatment introduced by Lord Lister, with the various modifications which time and bacteriological science have rendered advisable. The author has succeeded in the task which he had set himself. The book commences with a sketch of the life and work of Lord Lister, and the account is very clear and readable, and gives a general idea of the main points in the new method. We thoroughly agree with the author in what he says of the artificial distinction which is often made between antiseptic and the so-called aseptic surgery. The remainder of the book deals with the application in practice of the principles of wound treatment in modern surgery. The preparations for operation are described, the conduct of the operation is detailed, and the after-treatment is also dealt with.

This little work should prove of value to dressers just entering on their duties in the wards, by enabling them to appreciate the importance of the duties entrusted to them, and to realise how much depends on the conscientious carrying out of the principles here laid down.

LIBRARY TABLE.

Surgical Pathology and Morbid Anatomy. By Sir ANTHONY A. BOWLBY, C.M.G., F.R.C.S. Eng., Surgeon in Ordinary to His Majesty the King and to St. Bartholomew's Hospital. Sixth edition. Edited with the assistance of Dr. F. W. ANDREWES, Lecturer on Pathology at St. Bartholomew's Hospital, Professor of Pathology in the University of London. London: J. and A. Churchill. 1913. Pp. 650. Price 10*s.* 6*d.* net.—Twenty-six years have elapsed since the appearance of the first edition of this work, and during all these years it has been regarded as one of the best expositions of surgical pathology. This, the sixth, edition will but add to the reputation won when the book first appeared. The changes which have been made in the present edition have been due mainly to Dr. F. W. Andrewes, and his name is a sufficient guarantee that the book is representative of our present knowledge, and though many recent results have been incorporated, the size of the volume has not been increased materially. The clearness and accuracy of the descriptions will enable even junior students to understand the more difficult problems of pathology; as an instance, we may cite the account of the Wassermann reaction. A few illustrations have been added.

(1) *Gynæcology for Nurses and Gynæcological Nursing.* By COMYNS BERKELEY, M.A., M.D., B.C. Cantab., F.R.C.P. Lond., M.R.C.S. Eng., Obstetric and Gynæcological Surgeon to the Middlesex Hospital. Second edition, revised and enlarged. With 13 illustrations. London: The Scientific Press, Limited. 1913. Pp. 166. Price 2*s.* 6*d.* net. (2) *Obstetric and Gynecologic Nursing.* By E. P. DAVIS, Professor of Obstetrics in the Jefferson Medical College, Philadelphia; Obstetrician to the Jefferson Hospital.

Fourth edition, thoroughly revised. London and Philadelphia: W. B. Saunders Co. 1913. Pp. 480. Price 8s. net.—(1) In the second edition of this book the author has carried out a complete revision and has added a good deal of new matter. The size of the book has increased from 114 to 166 pages, an index has been added, and illustrations are given of the instruments required for various operations. The book has evidently met with a favourable reception and proved useful to nurses who wish to obtain not only a theoretical knowledge of gynæcological nursing, but also some information about the commoner gynæcological affections. In books of this description the temptation is always present to give too much information and to describe procedures which are outside the province of a nurse, however well trained or capable she may be. An instance of this is, we think, to be found in the elaborate table given for the examination of the urine, a most excellent one, we must admit, and very helpful, even to a medical man. We cannot admit, however, that it is the function of a nurse to examine a patient's urine, and in our opinion she should not be allowed as a nurse to take any such responsibility, and if this rule is followed, then such a table is out of place in a book intended for nurses. We hardly think that it is a common custom for a medical man to entrust the examination of the urine to a nurse before an operation, but we may, of course, be mistaken. The book contains a great deal of very useful information and is pleasantly written.—(2) It is not necessary for us to say anything in favour of a book which has reached its fourth edition and has met with so much praise as this work of Dr. Davis. It contains a large amount of information clearly expressed and arranged in an orderly manner. The chief feature of the work is the practical nature of the teaching and the common sense which distinguishes it. No doubt this revised and enlarged edition will meet with as favourable a reception as those which have preceded it, and will be read with interest and profit by many nurses and midwives.

Photomicrographs of Spirochetæ, Entamebæ, Plasmodia, Trypanosomes, Leishmania, Negri Bodies, and Parasitic Helminths. War Department: Office of Surgeon-General. Bulletin No. 1. January, 1913. Washington, D.C.—A very useful little collection of excellent photomicrographs reproduced in heliotype from original negatives which are in great part due to Dr. William M. Gray of the United States Army Medical Museum. These are accompanied by a brief explanatory text supplied by Major F. F. Russell and several collaborators. There are also directions for the preparations of specimens similar to those photographed. No doubt they will prove, as hoped, of considerable help to medical officers in their study and diagnosis of the parasites considered. There are 17 plates which, with few exceptions, each contain four illustrations. The title gives the list of organisms dealt with. Amongst the most interesting, useful, and technically successful are the photographs of living specimens of entamœbæ. The illustration of leishmania s also excellent, and the work finishes with good representations of, and a very useful method for preserving the ova of helminths. The bulletin adds one more to the publications for which we are so deeply indebted to the Medical Department of the United States Army.

MISCELLANEOUS VOLUMES.

A number of collected papers on physiology and medical research, psychology, and eugenics are before us, as well as two guide books for those interested in socio-economic work.

Collected Papers from the Institute of Physiology, University College, London. Vol. XVII. Edited by ERNEST H. STARLING, M.D., F.R.C.P.Lond., F.R.S., Jodrell Professor of Physiology. 1912–13.—This volume contains the following 32 papers relating to work done in the University College Physiological Laboratory which have been collected from the *Proceedings of the Royal Society*, the *Journal of Physiology*, the *Review of Neurology and Psychiatry*, the *Biochemical Journal*, the *Biochemische Zeitschrift*, and the *Archiv für die gesamte Physiologie*: The Sensory Fibres of the Phrenic Nerve, by G. C. Mathison; The Influence of Variations in Temperature and Blood Pressure on the Performance of the Isolated Mammalian Heart, by F. P. Knowlton and E. H. Starling; On a Simple Form of Stromuhr, by H. Ishikawa and E. H. Starling; The Gaseous Metabolism of the Heart and Lungs, by C. Lovatt Evans; On the Part Played by the Suprarenals in the Normal Vascular Reactions of the Body, and On Local Vascular Reactions and their Interpretation, by G. von Anrep; The Action of Carbon Dioxide on the Vascular System, by S. Itami; On the Nature of Pancreatic Diabetes (preliminary communication), by F. P. Knowlton and E. H. Starling; Experiments on the Consumption of Sugar in the Normal and the Diabetic Heart, by F. P. Knowlton and E. H. Starling; The Relation of the Islets of Langerhans to the Pancreatic Acini under Various Conditions of Secretory Activity, by John Homans; Note on the Fate of Secretin in Pancreatic Diabetes, by C. Lovatt Evans; On the Preparation of Secretin, by Wilhelm Stepp; A Simple "Frictionless" Tracing Point, by W. M. Bayliss; A Class Experiment to illustrate the Synthetic Action of Enzymes, by W. M. Bayliss; Further Note on Class Experiment to show Synthesis of Enzymes, by W. M. Bayliss; Researches on the Nature of Enzyme Action. II. The Synthetic Properties of Anti-Emulsin, by W. M. Bayliss; The Production of Heat in Decerebrate Rigidity, by W. M. Bayliss; The Amyloclastic Property of Saliva, by C. Lovatt Evans; A Criticism of Two Methods for the Determination of Amyloclastic Activity, by C. Lovatt Evans; Der Einfluss der Nahrung auf den Amylasegehalt des menschlichen Speichels, von C. Lovatt Evans; On the Nature of Animal Lactase, by Marjory Stephenson; Hydroxymethylphosphinic Acid and some Homologues, by Harold James Page; The Metabolism of Organic Phosphorus Compounds, their Hydrolysis by the Action of Enzymes, by R. H. A. Plimmer; The Hydrolysis of Organic Phosphorus Compounds by Dilute Acid and by Dilute Alkali; by R. H. A. Plimmer; An Investigation of Phytin, by R. H. A. Plimmer and H. J. Page; A New Test for Colour Blindness, by F. W. Edridge-Green; Simultaneous Colour Contrast, by F. W. Edridge-Green; Negative After-Images and Successive Contrast with Pure Spectral Colours, by A. W. Porter and F. W. Edridge-Green; New Visual Phenomena, by F. W. Edridge-Green; Dichromatisches Sehen, von F. W. Edridge-Green; Colour Adaptation, by F. W. Edridge-Green; Trichromic Vision and Anomalous Trichromatism, by F. W. Edridge-Green.

Studies from the Rockefeller Institute for Medical Research. Vol. XVI. (New York: Published by the Institute. 1913.)—The reports from this laboratory are always of interest to those engaged in research in biochemistry and experimental medicine. The present volume contains 29 reprints from the *Journal of Biological Chemistry*, the *Journal of the American Medical Association*, the *Journal of Experimental Zoology*, the *Archives of Internal Medicine*, the *Journal of Experimental Medicine*, the *Journal of Infectious Diseases*, the *Popular Science Monthly*, the *Zentralblatt für Physiologie*, the *Biochemische Zeitschrift*, the *Berliner Klinische Wochenschrift*, and *Hoppe-Seyler's Zeitschrift für Physiologische Chemie*. Among the papers having a more immediate relation to practical medicine are Pharyngeal Insufflation: a Preliminary Note on a Simple Method of

Artificial Respiration, by S. J. Meltzer; Malarial Pigment (Hæmatin) as a Factor in the Production of the Malarial Paroxysm, by Wade H. Brown; On the Transmission of Immunity from Mother to Offspring, by L. W. Famulener; A Clinical Study of Acute Poliomyelitis, by Francis W. Peabody, George Draper, and A. R. Dochez; and The Preservation of Tissues and its Application in Surgery, by Alexis Carrel.——Besides the customary official matter contained in the *Proceedings of the American Medico-Psychological Association, 1912* (Published by the Association. 1912. Pp. 511), this volume contains also 27 communications made at the sixty-eighth annual meeting at Atlantic City, New Jersey, in 1912, with the discussions thereon. Besides certain communications of more or less local interest, there are several papers of a more general character, such as those on the Legitimate Use of Psychic Influences in the Treatment of the Insane, by Dr. H. C. Eyman; on Convention, by Dr. Andrew McPhail; on Occupation for the Insane, by Dr. Arthur P. Herring and Dr. C. Floyd Haviland; on the Cortical Representation of Emotion, by Dr. C. K. Mills; on Alzheimer's Disease and on Korsakoff's Psychosis, respectively by Dr. C. Fuller and Dr. H. I. Klopp and Dr. W. C. Sandy; and on the Exciting Causes in Psychiatry, by Dr. A. J. Rosanoff and others.

Eugenics is represented by the Proceedings of two Congresses. The first International Eugenics Congress, which met in London from July 25th to 30th, 1912, under the presidency of Major Leonard Darwin, was reported briefly in THE LANCET of August 3rd, 1912. The papers to be read were published in volume form under the title, *Problems in Eugenics*, before the Congress as far as practicable. A supplementary volume (London: Eugenics Educational Society. 1913. Pp. 189. Price 3*s.* 6*d.* net) now before us contains those papers not received in time for publication in the first volume.—In *Comptes Rendus et Rapports de la IVme Conférence Internationale de Génétique, Paris, 1911* (edited par Ph. de VILMORIN, Secrétaire de la Conférence. Paris: Masson et Cie. 1913. Pp. 571. Price 25 francs), are contained *in extenso* the 58 communications on various subjects connected with genetics made to the Fourth International Congress of Genetics which assembled in Paris in September, 1911. The communications are published either in French or English, with a *résumé* in the alternative language. The volume contains many admirable photogravures and portraits and ten coloured plates. Though somewhat tardy in appearance, it will appeal to those especially interested in the study of genetics.

To all who are interested in our various charities, their organisation and methods of procedure, the *Annual Charities Register and Digest*, by C. S. LOCH, secretary to the council of the Charity Organisation Society (London: Longmans, Green, and Co. 1913. Pp. 376. Price 5*s.* net), will be found indispensable It is a classified list of the various institutions ministering to the needs of the poor, and contains a copious index, making reference easy to all charitable institutions in or available for the metropolis. A digest of information respecting legal and voluntary means for the prevention and relief of distress and the improvement of the condition of the needy is added. A review of the year and practical papers written by competent persons on various phases of charitable work are also included.——One of the best and the cheapest, as it is also the oldest, guides to the charities of London is *Low's Handbook* (London: Charles H. Sell. 1913. Pp. 250. Price 1*s.*), in which the charities are arranged alphabetically in paragraphs giving objects, date of formation, office, income, expenditure, list of officers, and so forth, while the preface this year dea's with homes for working boys.

JOURNALS.

Quarterly Journal of Experimental Physiology. **Editors:** E. A. SCHÄFER, F. GOTCH, W. D. HALLIBURTON, C. S. SHERRINGTON, E. H. STARLING, and A. D. WALLER. Vol. VI., No. 3, July, 1913. London: Charles Griffin and Co., Limited. Pp. 209–310. Price 7*s.* 6*d.*—This number is taken up entirely by two papers on allied subjects.—T. Graham Brown presents a continuation of his Studies in the Physiology of the Nervous System and we have the thirteenth communication entitled, "The Compounding of Stimuli in Temporal Succession." The author has shown more fully the changes which ensue in the spinal centres after their disturbance by a reflex stimulus in spinal preparations—normal and "de-afferented," and in decerebrate preparations. The paper extends to 40 pages, is highly technical, and is admirably illustrated. The author's "conclusions" occupy nearly eight pages and the "summary" nearly ten.—Professor Sherrington contributes an admirable experimental and philosophical paper on Reflex Inhibition as a Factor in the Coördination of Movements and Postures, which is illustrated by 22 figures in the text. One of these is a very good drawing of the muscles of the hind limb of a cat, showing the muscles as observed by experimental analysis to be engaged in contracting in the flexion phase and in the extension phase of the reflex step in this animal. It is shown that restraint by inhibition is as fully a reaction to a stimulus as is excitatory response itself. The subjects investigated and discussed are inhibition in relation to autonomic and to skeletal muscle, nature of reflex inhibition, inhibition as a factor in the reflex figure and in reflex response, double reciprocal innervation, de-afferentation of the muscle and reflex inhibition, fatigue and reversal of reciprocal innervation, and the motor cortex and inhibition. The concluding remarks, which extend to nearly two pages, are specially worthy of perusal.

New Inventions.

A NEW SCREW AND SCREW-DRIVER FOR USE IN THE OPERATIVE TREATMENT OF FRACTURES.

THE screw-driver as shown in the illustration has projecting from its end prongs, four in number, which fit into corresponding notches at the margin of the head of the screw. A very secure "bite" is thus obtained, the screw-driver having no tendency to slip off the head of the screw, as so often happens with the ordinary form in common use. It is also more easy to drive the screw straightly home, there being no tendency to deviation. The screw-driver is

FULL SIZE END OF SCREW DRIVER

magnetised, so that the screw can be carried to the bone on its end, and placed in position without any screw-holder. Nothing, therefore, should touch the screw after it has once been put in place on the end of the driver. The screw can be driven in flush with a Lane's plate, as the end of the driver is the exact size of the head of the screw. The advantages over the ordinary screw-driver and screw are the much more secure "bite" and the portability gained by magnetisation.

The instruments are made by Messrs. Allen and Hanburys, Limited, of 48, Wigmore-street, London, W.

J. ST. ANDREW TITMAS, M.R.C.S. Eng.

Haverstock Hill, N.W.

THE LANCET.

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The Administration of Medical Benefits by the Approved Societies.

IN a leading article in THE LANCET last week we dealt with the statement of the President of the National Conference of Friendly Societies who holds that the methods of administering medical benefit under the National Insurance Act have favoured the growth of malingering. We then pointed out that if Mr. WARREN'S desire to transfer the administration of medical benefit from Local Insurance Committees to the Approved Societies should be realised one of the best features of the National Insurance Act would cease to exist. We did so not without knowledge that for political reasons this very feature might be threatened at any moment, but those who support such an alteration in the existing Act will be well advised to consider their action. A very large section of the medical profession at the first reading of the National Insurance Bill were strongly opposed to the measure, and not a few of those have remained opposed to it since the Bill became an Act. The antagonism of these latter is perfectly justified. They considered, and still consider, for reasons which cannot be called other than logical, that to compel a large half of the medical profession to undertake contract practice whether they liked it or no was a tyrannous deed. They have remained irreconcilable despite the evidence of good work which is being done under the Act on all sides, and it seems quite possible that they may find their numbers vastly swollen. Another section of the medical profession, not so large, were able more or less to approve of the Bill either as it appeared or as it was finally shaped, and declared themselves from the first willing to work the Act. A third section having withdrawn their resistance at the last moment have been working the Act with more or less reluctance and with varying fortune. Some are openly satisfied with the pecuniary results, and some are not so satisfied, but the whole of this intermediate group have regarded the Act, since they went on the panels, as a piece of legislation under whose provisions they must loyally discharge their duties; they have relied for necessary remedies upon producing, in accordance with their experience, arguments for amendment in various directions.

Such has been and is the attitude of the medical profession toward the National Insurance Act, and of all the inducements towards a modified reconciliation with the upheaval of professional practice the most potent was the fact that under the Act medical benefits were administered by Local Insurance Committees and not by the Approved Societies. To some extent this made it certain that the authority from whom medical men received their contracts for professional work, and to whom they were responsible for the way in which they discharged that work, was one upon which public bodies and members of their own profession were represented. We say "to some extent," for it is well known that the Local Insurance Committees were considered by many medical men to comprise too small a medical representation, so that under their authority the risk of medical men being under the jurisdiction of laymen was not removed, while the institution of Local Medical Committees hardly modified that risk, because the function of these latter Committees is advisory only. No one thought the Local Insurance Committees faultless bodies, but at any rate the old tyranny of the clubs was abolished by their institution, while the principle of free choice of doctor was secured. It had been easy in recent times for a club or medical aid association, acting through possibly ignorant laymen, to discharge the medical officer who was their servant, whether the members of the club or association approved or not, and to impose upon those members another medical man, also whether the members approved or not. The occurrence of these scandalous things—not, be it remembered, theoretical possibilities, but things that have happened over and over again—was obviated when the National Insurance Act freed the practitioners on the panel from the direct authority of Approved Societies. In a measure which has been imposed upon the medical profession without consultation with them, which owes its success to medical work, and which threatens to some extent both medical charities and the standard of scientific education, one thing appealed to the professional sentiments of us all—at any rate, the Battle of the Clubs was over, and medical men could no longer be hired, discharged, or disciplined by Medical Aid Associations.

It has come to us with somewhat of a shock, therefore, to learn that an amendment has been set down by Mr. GODFREY LOCKER-LAMPSON, in Committee of the Bill to amend the National Insurance Act, which proposes to restore to Approved Societies the administration of medical benefits. Mr. LOCKER-LAMPSON'S amendment is in the following terms:—

> Where in any town or district an approved society proves to the satisfaction of the Commissioners that it can provide adequate medical benefit for its members, and that it has made arrangements with one or more resident local medical practitioners to that end, it shall be at liberty to administer such benefit, and the provisions of the principal Act shall be varied accordingly, but so however that any member of such society shall be at liberty to take medical benefit as provided by the principal Act.

The insertion of any such provision into the amending Bill brought forward by Mr. LLOYD GEORGE at the end of June will restart the miserable and luckless quarrel between the medical profession and the Government, and perhaps this is Mr. GODFREY LOCKER-LAMPSON'S idea. At the bare mention of such an alteration the whole struggle of the medical profession against the National Insurance Act bids fair to be revived. The medical men see that one of the great redeeming features of the Act, as far as the medical profession is concerned, will be removed if Mr. LOCKER-LAMPSON'S amendment should succeed, and it is possible in the present condition of political parties that the retrograde proposal may succeed.

There was a time when on both sides of the House of Commons the feeling was unanimous that the medical profession should be free from dictation by lay bodies, and that insured persons should have the right to choose their medical advisers. We are no longer certain what friends we have as a profession, but there is not a medical man who cannot see that the claims of political expediency will outweigh with Members of Parliament those of the prevention of disease or the advancement of learning. At the annual meeting of the Representative Body of the British Medical Association at Brighton on Saturday, July 19th, the following resolution was adopted unanimously:—

That this meeting strongly protests against the amendment to the National Insurance Act, proposed by Mr. G. LOCKER-LAMPSON, having for its object the transference of the administration of medical benefit to Approved Societies, which would be a distinct breach of faith between Parliament and the medical profession, and will, in the interests of the public and the profession, offer the most strenuous opposition to this or any other attempt of the kind.

We do not consider that the resolution is too strongly worded. We can quite understand that in some cases the Approved Societies, by offering better terms to their old medical officers than they formerly cared to do, would secure an excellent medical service; but there is no guarantee that all medical clubs, having got matters into their own hands, would behave with this sense or justice. To place the medical profession now at the mercy of the Approved Societies, having secured the assistance of the profession upon the panels by leaving the authority in the hands of the Local Insurance Committees, would be nothing short of a breach of faith.

The British Medical Association: the Address in Medicine.

THE conception of internal secretion is one which has been fruitful, not only in regard to physiology, but also in enriching therapeutics with definite substances of great activity and of notable value. It has also served to explain the genesis of certain obscure diseases, and has done perhaps more than anything to demonstrate the importance of the biochemical interrelations of the various organs and tissues of complex organisms. Professor GEORGE R. MURRAY in selecting Some Aspects of Internal Secretion in Disease as the subject of his Address in Medicine before the Eighty-first Annual Meeting of the British Medical Association, has succeeded in giving a thoughtful and practical *résumé* of the present state of our knowledge in regard to this question. His remarks are of the greater interest from the fact that he was one of the earlier workers in this field of research, and the critical and practical character of his address shows clearly that he has kept well in touch with subsequent work upon the subject, and has weighed it in the balance of experience. His warning at the outset, that we are apt to fail to distinguish between what has been ascertained and what is still largely theoretical, is a timely one and deserves emphasis. The large amount of experimental and pathological work upon the subject of the internal secretions or hormones carried out in recent years has formed the basis upon which an even loftier superstructure of speculation has been erected. In not a few instances hypotheses of great complexity masquerade as established fact. Professor MURRAY points out that this is most unfortunate, since it serves to hinder rather than to accelerate the application of our knowledge to the development of reliable methods of treatment. In his review of the present state of the subject he carefully distinguished between the practical and the theoretical, and it is this eclectic note which gives a special value to his remarks.

In view of Professor MURRAY'S special interest in diseases of the thyroid body, it is not surprising that a considerable part of his address was devoted to the gland and the disturbances of its functions in disease, together with their treatment. In commenting upon thyroidal insufficiency, he bids us note that whereas typical cases of established myxœdema are strikingly characteristic, the slight and early forms of the disease may easily be overlooked. In middle-aged women who complain of lassitude, chilliness, and other subjective sensations, associated with slight dryness of the skin, some loss of hair, and a little thickening of the subcutaneous tissues, or other signs of slight thyroidal insufficiency, it is necessary to remember that myxœdema may be the explanation of the symptoms, though every one of them, taken separately, is so common and so trivial. He summarises briefly the effects of the partial or complete failure of thyroidal hormones as demonstrated by the effects of disease or removal of the gland in man and animals, and includes a short historical review of the application of the knowledge so obtained to the treatment of thyroidal insufficiency, making a very modest reference to his own important share in this notable therapeutic advance. In this connexion it is interesting to learn that the first case of myxœdema which Professor MURRAY treated is still alive and well, having been kept in health 22 years by this treatment, during which time she has taken liquid thyroid extract to an amount which in all is less than one gallon. The use of thyroid extract in various conditions in which there is no definite evidence of any deficiency in the thyroidal hormones makes another interesting section of the address, and the effects of hyperactivity of the thyroid gland, more especially as evidenced in the various degrees of exophthalmic goitre, are of the real importance which he attributes to them. Professor MURRAY points out some interesting associations of this disease, notably its relation to sugar tolerance and diabetes and to tuberculosis. He has found that pulmonary tuberculosis occurs but rarely in uncomplicated cases of exophthalmic goitre, and that when it does occur it is usually limited in extent and activity. This apparent resistance to infection he suggests is probably due to the increased activity of the metabolism of the tissues rather than to any direct action of the thyroid secretion. In commenting upon the variability of the symptoms of Graves's disease, the occurrence of general and local crises was described by Professor MURRAY. In the general crises almost all the symptoms are aggravated, and the attacks may be alarming and dangerous. The explanation offered is that they are due to a sudden increase in the activity of the thyroid. The local crises may be described as cardiac, cutaneous, bronchial, gastric, or intestinal, according to the organ or system mainly affected. To account for these

local manifestations it is suggested that the thyroid secretion may contain different hormones capable of activating different organs. It is evident that here we are on less secure ground and that further observations are necessary. Professor MURRAY in this connexion indicates that we are as yet ignorant of the manner in which the thyroid hormones produce the characteristic tachycardia of Graves's disease. In reviewing the treatment of the condition of hyperthyroidism he speaks favourably of the application of suitable doses of X rays to the gland, and finds that the cutaneous and bronchial crises are generally controlled by belladonna in full doses and the gastric and intestinal crises by opium.

The remainder of this interesting address is devoted to a brief examination of the functions of the other ductless glands and of certain other glandular structures believed to produce hormones, such as the pancreas and the generative glands. The remarkable interrelationships of these glands are passed in review, and their important activities in connexion with growth and sexual development outlined. Professor MURRAY concludes on a note of hopefulness in regard to the future of the subject of internal secretion and its practical applications, which we are glad to notice and to endorse. He thinks it probable that as our knowledge increases some less definite forms of ill-health than those at present recognised may be found to be due to variations in the activity of these glands, and that we shall acquire further means of controlling their activities and so find more efficient methods of treatment of some of these conditions than those at present available. With this cautious optimism we are in accord.

The British Medical Association: the Address in Surgery.

THE *motif* of the address delivered by Sir BERKELEY MOYNIHAN was the recognition of the benefits which surgery has conferred on medicine, alluding here to medicine proper, or therapeutics as distinct from surgical interference. He showed good cause for valuing highly the additions to our knowledge gained by the surgeon in the course of operations. At one time we were dependent for our knowledge of pathological changes almost entirely on the observation of those lesions which could be seen at the time of the necropsy, and therefore pathologists had to endeavour to explain the symptoms of the earlier stages of the disease by the organic changes which could be found after death. Too often the late signs could not be made to explain satisfactorily the early symptoms, a difficulty notably present in the group of manifestations which has been classed together as dyspepsia. For many years these symptoms were regarded as merely functional in origin; they were ascribed to a deficiency or to an excess of the gastric juice, or to a diminution in the activity of the gastric muscular tissue. But our views of dyspepsia have been completely changed. The advent of abdominal surgery has shown that in many instances there is a manifest organic change to which the symptoms must be attributed, for when surgery has remedied the organic condition the symptoms cease. One of the most striking advances has been in cases of pyloric obstruction. The introduction of the operation of gastro-enterostomy has given results amazing in their nature and in the rapidity with which they are obtained. Patients who for years have been unable to take more than the minimum of food, who have been afflicted with distressing vomiting at intervals of only a few days, and who have been brought to the verge of death with weakness and wasting, have in little more than a week or two found that they are able to take any food, and to eat with a relish and an appetite which they have not known for years, and they have rapidly increased in weight. As an instance we may quote a case operated upon by Sir BERKELEY MOYNIHAN in which a patient's weight in a few years increased from 51 lb. to over 131 lb.; this, of course, was a remarkable occurrence, but it is not very rare for the weight of a patient to be doubled.

As the number of gastric operations increased, and the records of surgeons became available in many directions for comparison, it appeared that many subjects in whom a diagnosis of gastric ulcer had been confidently made were found, when the abdomen was opened, not to be suffering from any ulceration of the stomach, while gastro-enterostomy relieved them not a whit. In the duodenum also no ulceration could be found; but on wider examination an inflammation of the vermiform appendix was discovered to be present, and Sir BERKELEY MOYNIHAN'S paradoxical opinion is that the most common site for a "gastric ulcer" is in the right iliac fossa, or that an appendicitis is often the real cause of the symptoms. Not that the stomach is quite healthy, for we know that in all these cases there is a change in the appearance of the gastric mucous membrane; there is a vivid injection, a deep congestion of the pyloric portion of the stomach, and in addition some enlargement of the sub-pyloric group of glands. The evidence is increasing, as more operations are recorded, that chronic inflammation of the appendix may be the precursor of gastric ulcer. Another fact that has been brought out by the investigations of surgeons through the medium of operations is the dependence of malignant disease of the stomach on previous ulceration. Of the patients with gastric carcinoma who come to the surgeon two out of three give a history of dyspepsia of some months' or years' duration, and they state that it is only after a long course of dyspepsia that weight is more rapidly lost, that anæmia develops, and that the appetite fails. This is probably when malignant disease supervenes, the view being borne out by the results observed at the Mayo Clinic.

In the matter of the pancreas, again, we find proof of the service which surgery has rendered to medicine. Little indeed was known of the diseases of this organ until the surgeon investigated the subject. The existence of chronic pancreatitis was unsuspected until it was described by surgeons. Suddenly it was shown by the results of operation that cases which were thought to be examples of cancer of the head of the pancreas will recover completely if the blocking of the bile-duct is relieved by forming an anastomosis between the gall-bladder and the duodenum, or even between the gall-bladder and the stomach. Improvement seems to occur even in the sad

cases when cancer is really present, but then, of course, the relief of symptoms is brief in duration. In many cases, however, complete recovery follows. Many patients, indeed, who have been submitted to operation are now well several years later. All of which goes to prove how powerful an assistant surgery has been in the elucidation of many of the problems of medicine which for ages remained unsolved, and we do not doubt that in the future, as in the past, the operative work of the surgeon will render the most valuable aid to therapeutics. Sir BERKELEY MOYNIHAN'S address was inspiriting and suggestive, and it should make us very hopeful of the solution by the surgeon of many pathological difficulties.

Annotations.

"Ne quid nimis."

THE BACTERIOLOGICAL STANDARDISATION OF DISINFECTANTS.

THE Council on Pharmacy and Chemistry of the American Medical Association has presented a report in which is announced the adoption of a method worked out in the Hygienic Laboratory of the United States Public Health Service for the bacteriological testing of disinfectants. The method has been public property for some considerable time. The details were published in the Hygienic Laboratory *Bulletin*, No. 82, of April, 1912, but the general principles of the process were published in January, 1911, in the *Journal of Infectious Diseases* by two members of the United States Public Health and Marine Hospital Service, Dr. John F. Anderson and Dr. Thomas B. McClintic. This publication was dealt with by us in an annotation in THE LANCET of Jan. 7th, 1911. The conclusions of the authors were of special interest to us in view of the work of our Commission upon the subject. "THE LANCET method," observed these investigators, "on the whole, seems to be a distinct advance over the Rideal-Walker, but nevertheless it appears to have certain rather serious faults ..... However, notwithstanding the objections noted, we believe THE LANCET method to be a distinct improvement over any other that has been proposed up to this time, and that with it constant results can be obtained by different workers. After doing considerable work with both the Rideal-Walker and THE LANCET methods, we came to the conclusion that, on account of the great variation in results that may be obtained with the former method, it was not a method to advise for the examination of disinfectants. While consistent results can be obtained with THE LANCET method, we believe, on account of the objections we have stated in the discussion of that method, that this method can be so modified as to greatly increase its usefulness. With this object in view, we have taken up in detail each step and factor concerned in the successful carrying out of the test, and propose the following method, to be described later, for the determination of the germicidal efficiency of disinfectants as compared with pure phenol. In proposing this method we desire to make full acknowledgment of our use of the Rideal-Walker and THE LANCET methods, especially the latter, as a basis for our work." The method was subsequently published in the Hygienic Laboratory *Bulletin* issued by the Treasury Department, Public Health and Marine Hospital Service of the United States, in which the authors repeat their acknowledgment of the help given to them by the work of our Commissioners upon the subject. In this report they give the results of the examination of a number of commercial disinfectants tested with and without organic matter by their modification of THE LANCET method. We now learn that this method is known in the United States as the Hygienic Laboratory coefficient. It has some of the features of the Rideal-Walker method as well as THE LANCET method. It has been quite generally adopted in the United States and is now used by the Federal Government in connexion with the purchase of disinfectants. Further, it has also been officially adopted by some State boards of health. By a resolution passed at the annual conference of State Boards of Health with the Public Health Service, held in Washington, June 1st, 1912, it was decided "that the United States Public Health Service Hygienic Laboratory method for the determination of the phenol coefficient of disinfectants be recommended to the several State boards of health as the standard method; that all regulations regarding disinfectants be based on this standard; and that the phenol coefficient be required to be stated on the label of each package containing such disinfectant." The Council on Pharmacy and Chemistry of the American Medical Association, in its report published in the *Journal of the American Medical Association* of April 26th, 1913, concludes that "it is evident from the above statements that the method is coming into very general use in the United States, and probably will supplant the other methods for the standardisation of disinfectants in this country." It has further been decided to recommend to the council the adoption of the Hygienic Laboratory phenol coefficient. It is a source of satisfaction to us to learn of our work upon the subject receiving official recognition such as this. Our inquiry, which was necessarily an arduous one, had its origin in an attempt to place the standardisation of disinfectants on a satisfactory basis unencumbered by commercial considerations. We did not expect to reach finality upon the question, but it is now obvious that our work was sufficiently suggestive to lead the way to the adoption of an official standard method. The Rideal-Walker was undoubtedly the pioneer method in this direction, but experience has shown that this was capable of considerable improvements in regard to securing regular and more consistent results at the hands of different workers. While on this subject we may note that in the May number of the *Analyst* Dr. S. Rideal is reported to have said at a meeting of the Society of Public Analysts, at which the question of the bacterial testing of disinfectants was discussed, that THE LANCET test "had not been heard of any more," a transparently incorrect observation in view of these recent events in the United States to which we have referred.

THE IMPERIAL CANCER RESEARCH FUND.

THE eleventh annual meeting of the Imperial Cancer Research Fund was held on July 17th at the Royal College of Surgeons of England, the Duke of Bedford, the President, being in the chair. The adoption of the annual report for 1912–13 was moved by Sir William Church, and seconded by Sir John McFadyean, and was duly carried. Sir W. Watson Cheyne was appointed honorary treasurer in place of Sir Henry Morris, who was unanimously elected a vice-president on the proposal of the president. The report of the executive committee referred, among other things, to the generous coöperation with other scientific bodies at home and abroad, whereby material for investigation is both given and received, and to the advantages accruing from interchange of views with investigators in America and Europe, as well as from the opportunities afforded to Dr. E. F. Bashford, the general superintendent, of observing at first hand the methods used and the experiments being made in various foreign laboratories.

The report of the honorary treasurer disclosed that the past year had been financially satisfactory, the general fund being substantially enriched by a legacy from the late Mr. James Wilcock, who had already given £1000 during his life, and the endowment fund by a munificent donation of £10,000 from Mr. Edwin Tate, of which, at the donor's request, the capital is to remain intact, only the interest being used for research, thus providing a perpetual addition to the available income for research. Legacies of £500 and £50 respectively have also been received from the executors of the late Mr. Stewart Dow and the late Mr. Andrew MacMahon. The report of the general superintendent and director of the laboratories deals at great length with the subject of experimental investigation; also with statistical investigations, the relative frequency of cancer, the notification of cancer, and with claims for cancer "cures." Of these there have been 12 brought forward during the past year. Wherever any tangible basis was adduced the claims have been investigated, but in no case has any justification for the claim been discovered. Two of the cures were plasters, both of undivulged composition; a third, so far as could be ascertained, consisted in the injection of a solution of potassium permanganate. Others were "brandy and egg," a secret "germicide," liquid paraffin, and an alleged radio-active mineral water. All the cases examined confirm anew the fact that in such cases of reported cure either there is no satisfactory evidence that the tumour was cancer, or if the diagnosis of cancer has been established, no cure has in fact been effected or the patient is already dead.

PHYSICIAN AND POET.

VERSE, as a medium of medical precept and practice, is familiar enough to the student of Latin. There are, for instance, the hexameters of Q. Serenus Sammonicus; those of the Schola Salernitana, and of Gerolamo Fracastoro. But verse does not make the poet, any more than the cowl makes the monk, and, as employed by the above-named authorities, it was preferred to prose as the more attractive vehicle, if not, indeed, as a "memoria technica." It is with the Renaissance that we find the physician cultivating the field of poetry proper, whether in the epic or the didactic, whether in the dramatic or the lyric vein. Inspired by classical, mainly Roman, models, whose language—the sole medium of communication in the world of literature and science—was familiar to him from his youth, the physician who possessed the vision and the faculty of the poet would, like Amaltheus, compose epigrams not unworthy of Martial, or, like Arthur Johnston, pour forth elegies rivalling those of Ovid, both authors representing a school whose traditions were perpetuated by Henry Vaughan, or Archibald Pitcairne, or Sir Henry Halford, or Francis Adams. But with the wane of Latin as the medium of culture and the rise and development of the modern languages in its stead, the physician, "touched to poetic issues," has drawn from other sources of inspiration, and, under freer and fresher conditions, has courted the Muse in the vernacular, till, abandoning the humanistic tradition, Henry Vaughan, for example, becomes a forerunner of Wordsworth, while Goldsmith develops as a less artificial Pope, and Leyden as a Border minstrel of the school of Scott. Later in the last century we find Lovell Beddoes reviving in his dramas the Elizabethan colour, Moir recalling the masterpiece of Filicaja in his noble sonnet on the St. Bernard and its Hospice; Wendell Holmes striking a deeper, subtler note than Longfellow. Later still, we have Robert Bridges, as physician and poet, innovating boldly and happily on preceding singers, lay as well as professional, taking new departures in metrical form, achieving effects at once original and pleasing in stress and cadence, and producing works, idyllic or dramatic, lyric or elegiac, which have slowly but surely won an audience profoundly appreciative, if not enthusiastic. It is something in these days, when the levelling roller of utilitarianism has done so much to suppress individuality, that even a high-priest of that cult, John Stuart Mill, came to regret the result of his own crusade and, *faute de mieux*, to put a premium on "eccentricity" if only as a foil to "sameness"—it is something, we say, to find the purer, more artistic form of literature renovated and reinforced by a votary whose discipline, intellectual and moral, academic and professional, has peculiarly fitted him for the task. For the discipline of medicine has no doubt maintained Robert Bridges in touch with what is most vital in the bequest of antiquity and with what is most spiritually contagious in that calling which appeals so directly to the sympathies. The physician—"Naturae minister et interpres"—whose daily walk keeps time with

> the still, sad music of humanity,

responds to appeals which are the very breath of life to the poet's mind and soul, and when his response takes expression in language and in metrical form at once pure, harmonious, and artistically inspired, we have a combination of coefficients as rich as it is rare.

THE CHEMICAL STERILISATION OF DRINKING WATER FOR MILITARY PURPOSES.

IT is a common experience that sterilising methods depending upon boiling and filtration often break down under the very trying conditions of a campaign. In an interesting paper we have received from Captain V. B. Nesfield, I.M.S., who writes from Bijnor in the United Provinces of India, it is stated that boiling and filtration do not prevent epidemics of water-borne disease amongst troops under war conditions because these methods are unpractical. He describes, however, a chemical method which he says is practical, efficient, economical, and rapid, judging from the experience he has gained during manœuvres carried out in peace time and in war. He sterilises the water by the addition of hypochlorite of lime, half a grain of which in five minutes is sufficient for a gallon of well, river, or pond water. He removes the excess of chlorinated lime by the addition of sodium thiosulphate, but observes that it is difficult to get rid completely of the taste of the hypochlorite, but the addition of a very small quantity of potassium iodide accomplishes this object. Altogether he employs for a gallon of water half a grain of chlorinated lime, which is then neutralised with half a grain of thiosulphate combined with one-tenth grain of potassium iodide. The hypochlorite is preserved in sealed tubes, each containing 25 grains, while a tabloid consisting of 25 grains of hyposulphite of soda and 5 grains of potassium iodide is used for neutralising purposes. The sterility of the water is ascertained by using "culture pills" consisting of sodium taurocholate, peptone, lactose, and sodium carbonate. To complete the method for military purposes a collapsible canvas tank is necessary. For most purposes the quantities of chemicals given above are sufficient, even although there may be some absorption of chlorine by organic matter. When the water is muddy and contaminated it should be strained through blankets and treated with two grains of hypochlorite per gallon and allowed to stand one hour before dechlorinating. An alternate process consists in using a mixture of potassium iodate and iodide with tartaric acid, free iodine being generated when these substances are dissolved in water. The excess of iodine is removed by the addition of thiosulphate with a little

carbonate of soda. The actual practicability of the process in the field was demonstrated by Captain Nesfield in connexion with the following events: (1) The Tibet Expedition; (2) the Cameronians, 1905; (3) the Barchacha Artillery Campaign; (4) the Agra concentration of troops for the Amir of Afghanistan; (5) famine relief operations in the United Provinces 1906–07, when over a million gallons of water were sterilised by this process; and (6) the Mohmund Expedition. Captain Nesfield has appealed to the sanitary department of the army to give the process a fair trial. His favourable experiences in regard to the simplicity, efficiency, but above all, practicability of the process seem to us to offer very good reasons why his appeal should be granted.

AORTIC ANEURYSM RUPTURING INTO THE PULMONARY ARTERY.

A RARE result of aortic aneurysm is rupture into one of the great veins—superior cava, inferior cava, or pulmonary artery. In the *Johns Hopkins Hospital Bulletin* for July Dr. H. N. Stevenson has reported three cases of rupture into the pulmonary artery—the only ones observed amongst 3900 necropsies at the hospital. In the first case a coloured man was admitted on Sept. 19th, 1912, complaining of dyspnœa. He gave a history of several attacks of gonorrhœa, but not of syphilis. His illness began about Christmas, 1911, with sudden dyspnœa, which had become worse. There were also præcordial pain and swelling of the legs and abdomen. Lately he had suffered from severe fits of coughing, with hæmoptysis and nausea. The veins in the neck were greatly dilated, and a whirling murmur was heard over the subclavian arteries. There was no definite tracheal tug, but a transmitted pulsation was felt over the trachea. The percussion note was dull and breath sounds were absent over the right base and above the spine of the left scapula. The point of maximum intensity of the heart's impulse was not very definitely localised in the fifth interspace in the mammary line. There was a diffuse heave of the whole sternum. In the third left interspace was a localised pulsation and friction fremitus was felt. Cardiac dulness began at the second rib and extended 14½ cm. to the left in the fifth interspace and 5½ cm. to the right in the fourth. At the apex a systolic murmur accompanied the first sound. At the base a diastolic murmur was heard. The pulmonary second sound was accentuated. In the area where the fremitus was palpable a machinery-like whirl, made up of a rough systolic murmur, an accentuated second sound, and a blowing sound running through both systole and diastole, was heard. The radial pulses were equal but collapsing. There was shifting dulness in the flanks. On the second day after admission a little blood-streaked sputum was expectorated, and was followed by a gush of pure blood and death within a few minutes. The necropsy showed syphilitic mesaortitis, aneurysm of the transverse arch of the aorta, two communications with the pulmonary artery, of which the larger was 1 cm. in diameter, hypertrophy of the right ventricle, passive congestion of the viscera, ascites, and rupture of the aneurysm into the left lower bronchus. In the second case a white man, aged 26 years, was admitted on Jan. 10th, 1910, complaining of pulsation of the heart. There was no history of venereal disease, but one of frequent exposure. He had been previously admitted, in December, 1908, for aortic aneurysm, which was wired by Dr. J. M. T. Finney. He improved and was discharged in June. Four weeks before his second admission he became puffy under the eyes and he suffered from attacks of vomiting and dyspnœa. When examined he was sitting up in bed by preference, resting on his arms. The lips and ears were cyanotic and the mucous membranes were pale. The vessels of the neck were full, especially on the right side. In the carotids was a systolic thrill, and on auscultation a continuous hum with systolic accentuation was heard. The pulse was collapsing, the left being smaller than the right. A definite tracheal tug was felt. There was a diffuse systolic heave of the chest with a pulsating prominence above the left præcordium. In the first four interspaces was an expansile impulse, a continuous thrill with systolic accentuation was felt, and a continuous rough murmur with systolic accentuation was heard. There were dulness in the flanks and œdema of the extremities. He grew weaker and died on Jan. 11th. The necropsy showed an aneurysm of the ascending arch of the aorta containing recent clot collected round a silver wire and communicating with the pulmonary artery by a hole 6 mm. in diameter. In the third case a coloured man, aged 45 years, was admitted on Jan. 5th, 1892, complaining of dyspnœa and weakness of the legs. His illness commenced in October, 1891, with cold and cough. Four weeks before admission dyspnœa with occasional attacks of nausea and vomiting began. He could not sleep lying down. The legs had been swollen for a few days. Chest resonance was good except for dulness at the right base. Cardiac dulness began at the upper border of the third rib and extended to the right border of the sternum. The cardiac impulse was 2 cm. outside the nipple line. The first sound was faint; the second was replaced by a dull prolonged murmur which became louder on passing upwards to the third rib. He grew weaker and died on Jan. 11th. The necropsy showed an aneurysm of the aortic arch communicating with the pulmonary artery by an opening half a millimetre in diameter. In the first two cases the opening into the pulmonary artery was large; in the third it was tiny. In the two former there were enlargement of the heart to the right and a collapsing pulse; in the latter these were absent. Moreover, there were a continuous thrill and murmur in the carotid and subclavian arteries in the former, while in the latter there were a single murmur and thrill.

THE BRITISH RED CROSS IN THE BALKAN WAR.

MEDICAL reports from the seat of war, wherever it may be, present a striking family likeness. The mortality among the earlier cases to reach the base hospitals is always considerably greater than that at a later period; the prevalence of epidemic disease is apparently inevitable; and the questions of transport of the wounded, of nursing, and of amateur help always present themselves in somewhat similar form. Mr. C. Max Page and Mr. S. V. Appleyard conclude in this issue of THE LANCET an account of their medical and surgical experience in the Balkan war, and as that war may now be resumed in serious form at any moment their story is worth close attention. It may be possible in future developments to guard against some of the troubles in organisation that occurred a few months ago. They state that the mortality of the first 130 cases dealt with at the British Red Cross base hospital in the Musée des Beaux Arts, Stamboul, corresponding to the early stages of the war, was 41·6 per cent. This was partly attributable to the defective condition of the transport, whereby many days of exposure and starvation elapsed between the incidence of the wound and arrival at the hospital. In the later period, when the men were better fed and in better condition generally, and the time of transport from the front had been reduced to from one to four days, this heavy mortality was reduced to 4 per cent. out of 448 cases. As to epidemic disease, the tale of dysentery, cholera, enteric fever, and typhus fever kept up the tradition of war, but everything seems to have been done to make the best of local conditions, and to fight disease with modern weapons and determination.

The numerous orderlies proved, it seems, a great stumbling block, native labour being more satisfactory for the ward work. This remark is in line with the observations made by Sir Alexander Ogston before the Royal Commission on the Boer war. The dressers, also, were too numerous. The authors suggest that they should rank rather as assistant surgeons with special duties. A point worthy of notice is the replacing of shallow cesspool latrines by bench latrines with old kerosene tins as reservoirs. In this connexion mention may be made of a comment by THE LANCET'S Special Correspondent[1] in the Russo-Japanese war, who remarked in reference to the Japanese latrines, which appear to have resembled the native latrines in Constantinople, that it will some day be recognised that it is better to substitute half a kerosene tin for the fixed open pan and to change it for a clean one every day. Carbolic acid is bulky in relation to its disinfecting power, and the authors suggest the substitution of some antiseptic of greater disinfecting power in proportion to its bulk—e.g., lysol or some kindred substance. The authors' professional experiences bear out those of other observers in recent wars. To the temperate habits of the Moslem are ascribed the absence of excitement, of respiratory obstruction, and of post-operative vomiting in regard to anæsthesia. The wounds from the modern small-bore rifle bullets are usually benign and aseptic, while shrapnel wounds usually suppurate. It will be remembered that during the Russo-Japanese war the rule was laid down with regard to bullet wounds, "if in doubt do not operate," and that the result was satisfactory, but that shrapnel wounds, owing to their greater liability to suppurate, demanded operation more frequently. In gunshot wounds of the skull, however, the authors' experience leads them to counsel operation as soon as proper conditions are available. While their experience in regard to abdominal wounds confirms the general trend of experience towards conservatism, their figures do not bear out the conclusions of many previous observers as to the comparative benignity of wounds of the thorax.

PREVENTION OF TUBERCULOSIS AMONG CHILDREN.

THE Public Health Bulletin No. 58 of the United States Public Health Service deals with "Open-Air Schools for the Prevention and Cure of Tuberculosis among Children," and is a document which should prove of interest and value to all concerned with preventive or curative medical work among the child population. The report is by Dr. B. S. Warren, passed assistant surgeon, United States Public Health Service, and is based on experience gained in St. Louis, Mo., and on reports of open-air schools in other parts of the United States. He states that the two main points to be considered in selecting a site for a school are accessibility and hygienic environment, and mentions the flat top of a large city building as a possibility, but thinks it better to sacrifice accessibility if one of the points must be given up. The type of building recommended is that open on all sides with canvas drop curtains for protection against severe cold winds. A school suitable for 30 children is described, and detail plans are given with photographs of a school erected from these plans. He advises separate schools for pretubercular or "closed cases" with no tubercle bacilli in sputum or other discharges, and for the "open cases" with tubercle bacilli present. One of the photographs shows the open-air school being carried on with snow on the ground, and the children are provided with Eskimo suits, looking very warm and cosy. A curious point which has been noted in England is commented on by Dr. Warren when he says: "Habits of life of the child should not be suddenly changed. Many children must be trained before they can eat enough of strange dishes to maintain their bodyweight and growth, and if forced at once into a recognised standard would lose in weight." Two record cards are suggested in the bulletin, one dealing with economic and family conditions, the second with the child individually, and charts of increase of weight and of gain in hæmoglobin are given. The results recorded in America are "uniformly good"; of 875 children reported on only 70 showed a loss in weight, and most of these were cases of active tuberculosis admitted too late to expect success. Attendance is good and percentage of absentees much less than in the public schools, coupled with which the children made remarkable progress in school. We are very glad to see that this excellent bulletin concludes by advocating open-air schools for all children, and prophesies wonderful results for normal children in which the application of the plan has not initial difficulties to contend with.

[1] THE LANCET, Jan. 28th, 1905, p. 256.

BERI-BERI IN SIAM.

THE Siamese, like other nations in the Far East in whose dietary white rice bulks largely, have suffered considerably of late years from beri-beri. In Bangkok, the capital, with a population of half a million, there have been 1278 deaths ascribed to the disease during the $2\frac{1}{3}$ years ended March 31st, 1912. As the suggestion had also been made that possibly Siam rice possessed special beri-beri producing qualities, the Ministry of Local Government decided to institute an official inquiry into the matter, and Dr. H. Campbell Highet, principal medical officer of health of Bangkok, was instructed to conduct the investigations, assisted by members of his scientific staff. His report has now been published, and it confirms the conclusions generally arrived at by Fraser and Stanton, as well as by other experts in the Malay Peninsula and elsewhere, and which we have from time to time reported in the columns of THE LANCET. Dr. Highet and his colleagues by their experiments demonstrated that Siam rice, when not over-milled, compares very favourably with rice from other places, such as Rangoon and Saigon, and that a beri-beri preventing rice can be prepared from Siam "padi" either by hand or steam mill and without the padi being previously parboiled. The phosphorus content of a rice should not be less than 4 per cent., and this should be taken as the indicator of the safety or otherwise of the rice. In view of the overwhelming evidence incriminating over-milled rice in connexion with beri-beri, some reformers have strongly urged that the law should interfere to prohibit the sale of this rice which has by milling been deprived of certain elements necessary for normal nutrition, but Dr. Highet expresses the opinion that, for the present at least, legislation in that direction in Siam is not advisable, more especially as it is not yet admitted what the actual substance is, the removal of which from the exterior of the rice grain by the process of milling leads to the development of beri-beri in the consumers of such rice. Meanwhile, the use of white, over-milled rice has been prohibited in the Siamese navy and in all the Government institutions, including asylums and prisons, as well as among the provincial gendarmery, a force which comprises about 9000 men. The result of this prohibition has been the almost complete disappearance of beri-beri from these various bodies; and were the Siamese army to follow suit the disease would, Dr. Highet says, be practically extinguished from the whole of the public service of the country. As regards the general population which has come to prefer the white rice and to reject any that is not well milled and polished, it is hoped that in time the force of education of the people in matters of diet and as to the danger arising from the consumption of rice deprived of some of its essential constituents will lead to

an altered attitude and to the complete disappearance ultimately of the malady from Siam.

BRITISH PHARMACEUTICAL CONFERENCE.

THE jubilee of the British Pharmaceutical Conference was fittingly celebrated at the annual meeting held in London this week. The suggestion, or rather the demand, made by the President, in his address, that in the revision of the British Pharmacopœia pharmacists should be officially recognised is not new, and is certainly deserving of serious consideration. At present the Pharmacopœia Committee of the General Medical Council is assisted voluntarily, and, let it be added, ably, by a committee of pharmacists, but Mr. J. C. Umney, who is a member of that committee, says he is confident that this is the last occasion upon which pharmacists will aid in the revision of the Pharmacopœia on the present conditions. Briefly, what Mr. Umney proposes is that a British Imperial Pharmacopœia Commission should be set up by Act of Parliament, and that on that commission medicine and pharmacy should alike be represented. It must be acknowledged that without the aid of pharmacists the Pharmacopœia could not be produced satisfactorily, and if they in future refuse their assistance, unless they share the honours of revision equally with the representatives of medicine, the position will be a delicate one. No doubt the difficulty will be solved by the use of common sense. The papers read in the Science Section of the Conference should prove a useful addition to pharmaceutical literature, and such work is in itself a strong support of Mr. Umney's views. In one of the papers some valuable suggestions are made with regard to preparations of ergot of rye. Now that the chief active principles of the drug have been isolated in a state of chemical purity and the mode of action of each worked out in full detail it certainly does seem opportune, as the authors, Mr. F. H. Carr and Mr. H. H. Dale, suggested, to submit to the test of this new knowledge the pharmacopœial requirements for the drug and its preparations. The results recorded of further investigations of thyroid glands will be useful; the author of one of the papers on this subject, Mr. R. G. Guyer, incidentally called attention to the dual standard at present in vogue in prescribing and dispensing thyroid gland preparations. He says that practitioners frequently prescribe, say, 3 grains of thyroid gland in tablet form, and do not define whether they mean moist or dry substance. He therefore suggests that as the Pharmacopœia definitely gives thyroideum siccum pharmacists should always employ that standard when dispensing tablets of their own make, or else should be certain that those they purchase conform to it. The papers certainly showed that there are many workers in the field of pharmaceutical research who are adding to the common stock of knowledge, and whose collaboration must be highly valuable to the physician.

TUBERCULOSIS OF MESENTERIC GLANDS SIMULATING GASTRIC ULCER.

IN the *Boston Medical and Surgical Journal* of March 6th Dr. M. V. Tyrode has reported a curious case in which tuberculosis of mesenteric glands simulated gastric ulcer. The patient was a slight man, aged 25 years, rather pale, and poorly developed. His previous illnesses consisted of children's diseases and a chancre two years before followed by ulceration of the throat. He had suffered from symptoms of indigestion for five or six years, consisting of pain in the epigastric region, going a little to the right side, with heartburn and eructation of sour fluid and belching after meals. Examination showed enlarged glands in the axilla and groin, moderate anæmia, a rather hard, flat abdomen with a resistant mass in the right upper quadrant which was slightly sensitive. The gastric contents after a Ewald test breakfast showed no retention and an excess of hydrochloric acid. It was thought that there was a gastric ulcer and that induration in connexion with it had given rise to the mass in the epigastrium. The patient improved under treatment, but was not cured. Exploratory laparotomy was therefore performed. The stomach and duodenum showed no evidence of ulceration, the gall-bladder contained no stones, and the appendix did not appear diseased, but the entire mesentery was riddled with enlarged glands varying from the size of a pea to that of a walnut. Where the mass had been felt was a particularly large collection. Most of the glands were hard, but some were soft and cheesy. There was no peritonitis and no adhesions or fluid. Before closing the abdomen a gland was removed for microscopic examination. It was found to be tuberculous. Treatment for tuberculosis—open air, forced feeding, and tonics—was adopted. The patient gained 10 lb. in weight and ceased to complain of pain, but was troubled by heartburn for some time. Some years later he was reported to be quite well.

THE ROYAL SOCIETY OF MEDICINE.

IN consequence of the International Congress of Medicine the usual time for closing the house of the Royal Society of Medicine for cleaning and stocktaking will be altered. Instead of the house being closed from August 1st to 31st, it will be closed from August 14th to Sept. 13th, both days inclusive.

MEDICAL AND SURGICAL EXPERIENCE IN THE BALKAN WAR.

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(*Concluded from p. 164.*)

SURGICAL CONSIDERATIONS.

IT was often impossible to determine from observation or the history what missile had produced a particular injury. Of the gunshot wounds we dealt with, approximately 60 per cent. were caused by rifle bullets and 40 per cent. by shrapnel. The rifle bullets in use on the Allies' side were of the Mannlicher pattern—0·322 inch bore. We came across no example of injury due to the light-pointed variety of missile used by the Turks. As this Mauser bullet is the same as that adopted by the German army some reference to its effect may be made. Fraenkel[1] says that from his experience he is of the opinion that rotation of the bullet after it has entered the body is common, that the exit wound is rather larger than is the case with the round-nosed bullet, and that lodging of the missile more frequently occurs. Colmus, Franz, and Fessler[2] make similar observations with regard to the nature of the exit wound. Shrapnel balls were often recovered from wounds and were of the usual soft type. Several irregular wounds caused by shell fragments were also observed.

With regard to the course taken by the wounds in general, healing by first intention was frequently seen. When the missile was a rifle bullet travelling at a high velocity this occurred irrespective of the part of the body hit, small dry scabs alone marking the point of the wounds of entry and exit. Wounds which were the result of shrapnel injuries usually suppurated, because by reason of their low velocity they often lodged in the tissues, carrying pieces of clothing with them, and more often causing irregular exit

[1] Fraenkel: Wiener Klinische Wochenschrift, No. 6, 1913.
[2] Colmus, Franz, and Fessler: Verhandlungen des Deutschen Congresses für Chirurgie, March, 1913.

wounds. The relative incidence of wounds of the explosive type was large in the early part of the war. This was probably due to the fact that many men not fatally hit by high-velocity bullets had time to recover during the eight to 12 days taken to convey them to the base. This slowness in transport may also account for the large proportion of infected cases seen during the same period. Certainly severe suppuration was much commoner than the reports from the Boer war had led us to anticipate. The poor condition of the troops resulting from inadequate feeding, exposure, and loss of *morale* was no doubt another factor leading to this state of affairs. As has been stated above, many of the men were practically put *hors de combat* from starvation. The early commissariat arrangements explain how such a state of affairs could occur. At the outbreak of hostilities many divisions of troops were paid money with which to purchase rations locally, and it was not long before any sort of food at the seat of operations commanded famine prices.

We will now give some account of our cases from a surgical standpoint, and follow it by an outline of the results of wounds in particular regions of the body. A certain number of ordinary operations—e.g., for hernia—were carried out and call for no special comment. In deference to Moslem prejudice no post-mortem examinations were made, and so the record of the fatal cases remains incomplete.

Anæsthesia.

We found that the Turkish soldier took chloroform very readily and seldom resented its administration. During the induction of anæsthesia the period of excitation was often unnoticeable, respiratory obstruction in the course of anæsthesia was rare, and post-operative vomiting was seldom noted. These features are attributable to the temperate habits of the Moslem.

Local anæsthesia induced by 1 per cent. novocaine solution was employed for a good number of subcutaneous bullet extractions and for minor incisions. Spinal anæsthesia was used in some 10 cases, a 5 per cent. solution of stovaine being employed; the difficulty of explaining the process to the patients was so great that the method proved impracticable.

Secondary Hæmorrhage.

Serious secondary hæmorrhage arose in 5 cases. In 3, in which the bleeding arose respectively from the orbit, the palm, and the calf, repeated plugging sufficed to control it. In one fatal case the hæmorrhage came from the femoral artery on the eighth day after an amputation for an infected wound of the knee-joint; religature in the wound was carried out, but in spite of infusion the man died a few hours later. In the other fatal case the man had a penetrating rifle-bullet wound of the neck near the large vessels, in addition to a fracture of the humerus. Death occurred suddenly on the eleventh day after admission from a large hæmorrhage into the pharynx; no evidence of an aneurysm had been noticed and the wounds were clean at the time of death, though they had been slightly infected at the time of admission.

Embolism.

Death appeared to be due to embolism in three cases; in all, the injury was in the upper extremity.

CASE 8.—Man admitted with eight days' history of a shrapnel injury to left elbow, explosive type exit wound. The joint was badly infected and signs of septicæmia present. Amputation below the shoulder on the eleventh day. On the following day œdema of the stump extending to the clavicular region was noted, general condition good. On the third day from the operation the man had a dyspnœic attack from which he recovered, but a similar event four hours later proved fatal.

CASE 43.—Compound gunshot fracture left humerus; injury of median and musculo-spiral nerves. Amputation was carried out two days after admission owing to septic state and great destruction of the tissues which had occurred. Death four days later, with an attack of symptoms similar to previous case. Œdema of the stump had also been noted.

CASE 274.—The man was admitted with a compound comminuted fracture of the right humerus; his general condition seemed good. After a convulsive seizure associated with cyanosis the man expired suddenly in the receiving room.

Tetanus.

Eight cases of tetanus were treated in the first group of cases; none were met with during the second part of the war. The incidence seems high, but similar results were met with at this period at other Constantinople hospitals. On the Servian side only 11 cases were reported from among 7000 wounded by Soubbotin.[3] Exner,[4] however, states that he saw 12 cases with 10 deaths among 900 wounded in Sofia. Of our 8 cases, all proved fatal in spite of the varied treatment employed. It is noticeable that 7 of the cases occurred in men wounded in the leg. The following table gives an outline of the history of each case.

Table of Tetanus Cases.

No. of case.	Nature of injury.	Approximate day of onset after wound.	Treatment.	Day of death after onset of symptoms.
11	? Shrapnel wound of left calf; explosive type.	11 days.	Excision of wound; serum intrathecally; drugs.	2 days.
27	Compound fracture of left femur; explosive type of exit wound.	8 ,,	Amputation; serum intrathecally; $CHCl_3$.	3 ,,
33	Explosive type; double wound of left thigh muscles.	10 ,,	Amputation; serum subcutaneously.	3 ,,
48	Compound fracture of left leg.	?	Amputation above knee; serum subcutaneously.	4 ,,
52	Compound fracture of right tibia; explosive type wound of left thigh; both septic.	9 days.	Serum intrathecally twice; magnesium sulphate 25%.	4 ,,
70	Compound fracture of left fibula; dysentery.	4 ,,	Amputation; serum intravenously; drugs.	5 ,,
95	Compound fracture of right humerus and right jaw.	?	Serum subcutaneously.	2 ,,
121	Fracture of left femur and of right tibia; both wounds infected.	7 days.	Serum subcutaneously; magnesium sulphate 25% intrathecally.	3 ,,

Gangrene.

Three distinct classes of this condition were met with—viz., (1) those which arose as a direct result of injury to the main vessels of the limb; (2) those due to an infective process; and (3) those cases of symmetrical gangrene which arose without any obvious local cause.

Class 1. Four cases were observed. In one (Case 30) gangrene of the hand arose secondarily to an extensively comminuted injury of the left elbow; the brachial artery and median nerve had been divided. Amputation in the middle of the arm was performed, but the man died five days after admission from meningitis extending from a shrapnel wound of the occiput. In another case gangrene of the leg set in secondary to a comminuted fracture of the lower end of the femur. Death occurred from dysentery 14 days after amputation. Two other cases of gangrene of the upper extremity, secondary to gunshot wounds about the clavicle, proved fatal soon after admission.

Class 2. We saw several cases of spreading emphysematous gangrene. All proved fatal despite energetic treatment. It is interesting to note that Montprofit[5] states that he saw many such cases on the Allies' side recover after free incisions had been made.

Class 3. The occurrence of this type of symmetrical gangrene does not appear to have been reported in recent wars, and its appearance in this campaign aroused considerable speculation as to its nature and origin. Six cases were treated at the Museum and three at Bakos; and one of us had the opportunity of examining a large number of cases at St. Stephano. Dreyer[6] reports on 31 cases seen in the German Hospital in Constantinople. The gangrene usually affected both feet; in degree it varied from mere blistering over one or two toes to the death *en masse* of the whole foot or part of the leg. Though, as stated, the gangrene usually affected both limbs, the extent of the disease on the two sides often varied. We saw no case in which the hands were affected, but Dr. Bourdillon saw one case of this type at St. Stephano. The remarkable case successfully treated by Dr. McClean[7] does not seem to come under this heading.

[3] Soubbotin: Société de Chirurgie de Paris, Feb. 26th, 1913.
[4] Exner: Wiener Klinische Wochenschrift, No. 6, 1913.
[5] Montprofit: Semaine Médicale, March 9th, 1913
[6] Dreyer: Verhandlungen des Deutschen Congresses für Chirurgie, March, 1913.
[7] THE LANCET, May 7th, 1913, p. 1401.

Type history of cases.—More than half the men affected were suffering from enteritis; all gave a history of having undergone long periods of exposure with insufficient food, while many had been left in wet trenches for 24 hours on end. The existence of the gangrene was often dated by the men from the time of their arrival in hospital, even in cases where the process was evidently of some standing.

Etiology.—Rye bread was not regularly used and so it may be excluded as a possible causative factor. Tight bandaging of the native type of foot covering and puttees has been considered by some to have originated the condition. We were unable to obtain any evidence of the existence of thrombosis in the main vessels. It seems probable that the gangrene was a vascular disturbance of the same nature as that occurring after frost bite, being induced by the exposure of exhausted men to the cold and wet. The dusky mottling seen on the feet of some cases with little or no gangrene exactly resembled the appearance seen after a slight frost bite.

Course.—The superficial cases and those in which only a few toes were involved were easily kept dry by the usual treatment. Separation of the dead part occurred in about 14 days. When the gangrene was more extensive, but not rapidly spreading or infected, amputation was performed after the formation of a line of demarcation. The cases in which the gangrene was moist and advancing, and when signs of toxæmia were present, usually proved fatal.

Fractures.

The contrast between the kind of injury caused by rifle-bullet wounds and those due to shrapnel was almost as marked in fracture cases as in those in which only the soft parts were involved. Several instances occurred in which a bullet traversed the end of a long bone without producing a fracture; the entrance and exit wounds were small and rapidly healed. In other cases the wounds from rifle-bullet injuries were of this simple class, and the bone was broken with but little comminution. Such cases ran the course of simple fractures. A fair number of fractures were seen which showed exit wounds of the explosive type after rifle-bullet injuries; in such cases the deposit of pieces of the mantle of the bullet among the fragments was common. The bone injuries produced by shrapnel, whether the ball lodged or not, practically all became infected; the extent of the comminution and fissuring was much more marked than in the previously mentioned type and consequently the after-course of the cases was more often complicated by necrosis.

Gunshot Injuries of the Skull.

We had under treatment 24 of these cases. Of the 13 fatal cases 6 were so severely injured that operation was considered useless. The following table shows the mortality of the different classes of injury met with:—

Nature of wound.	Recovered.	Died.
Wounds involving complete perforation of the skull and brain	4	7
Wounds involving the brain with aperture of entrance only	2	6
Tangential injuries with fracture of the comminuted gutter type	4	0
Depression of fragment without penetration	1	0

Seventeen cases were operated on, of which 10 recovered. The usual procedure was to raise a flap, including the wound of entry, all loose fragments were then removed, and any depressed area of bone elevated; trephining was not often necessary. A small tube was often left under the flap for 24 hours.

In only 1 case (that of a depressed fracture in the occipital region) was there much evidence of extradural hæmorrhage. Paralysis of the extremities was noted in 2 cases before operation; both injuries were gutter fractures over the motor area. In one case the fracture lay over the upper part of the left Rolandic area and was associated with a semi-paresis of three days' standing; the man made a complete recovery, except for the persistence of slight foot-drop on the affected side. In the other case only the right arm was affected and recovery of movement was complete, though two days after operation the man had a series of right-sided convulsions, and 14 days later he became blind. The flap was turned down again but nothing abnormal found. The eyesight did not improve.

The non-fatal case which recovered without operation was one of a perforating rifle-bullet wound. The wound of entry was over the right frontal lobe near the mid-line, the bullet then traversed the right superior maxilla and emerged below the right mandible, the wound of exit being of the explosive type. The man was concussed on admission, but made a steady recovery, complicated by the formation of an abscess over the superior maxilla.

Definitely localised abscesses in the brain substance were evacuated in cases operated on 5 and 8 days after the injury (both proved fatal).

Our experience confirms the general opinion that operation for skull injuries should be carried out as soon as proper conditions are available. No doubt some examples of perforating wounds from high-velocity rifle bullets cause so little comminution of the bone that nothing need be done. We operated in one or two such cases, and one of us saw a remarkable example of the kind at a Turkish hospital. The man had almost symmetrical small healed wounds of entrance and exit over the mastoid processes, just above the level of the lateral sinus; but beyond symptoms of concussion for a few days following the injury he did not seem to be the worse for the experience when seen ten days later.

Fraenkel[8] recounts several cases of tangential fractures which made, as far as could be judged at the time, a complete recovery without operation. He is inclined to the opinion that operation should be reserved for those cases which show either symptoms of paralysis, irritation, or abscess formation.

Fractures of the Lower Jaw.

Seven cases came under treatment, 2 of which were due to injuries other than gunshot. In all instances there was an external wound which became infected. Two cases died, one from tetanus (Case 95 above), the other from double septic broncho-pneumonia. Severe broncho-pneumonia arose in 3 other cases. Considerable necrosis of the bone occurred in 2.

Though fixation was always difficult on account of the condition of the wounds, good union was obtained in the non-fatal cases. In one case with extensive comminution, plating the bone from the outside was attempted, but on account of the suppuration the result was not very satisfactory.

Fractures of the Bones of the Upper Extremity.

In all, 28 cases were treated as in-patients. The following table gives an outline of the results:—

Bone fractured.	Healed per primam.	Suppurated.	Fatal.
Clavicle	2	1	0
Humerus	3	9	6
Radius and ulna	2	2	0
Bones of the hand	0	6	0

The high mortality among the humerus fracture cases is striking; in 3 cases death was apparently due to embolism (see above); in the remaining cases death was definitely due in two cases to some other injury, and to tetanus in 1 (Case 95). No case of non-union occurred, and of those in which the wounds healed well the fracture soon consolidated.

Fractures of the Bones of the Lower Extremity.

The figures below give in outline the class of case treated and the results:—

Bone injured.	Recoveries.		Deaths.		Total.
	Healed per primam.	Suppuration.	Healed per primam.	Suppuration.	
Femur	5	3	0	11	19
Tibia and fibula (one or both bones)	3	19	0	7	29
Bones of the foot	1	2	0	0	3

[8] Loc. cit.

The fatal results were attributed in the femur cases to the following causes:—

Dysentery (in one case amputation had been performed for gangrene)	3	Infection of knee-joint	1
Tetanus	4	Shock (other leg blown off) ...	1
Cranial injury	1	Septicæmia (double compound fracture)	1

Death in the cases of fracture of the leg was caused as follows:—

Tetanus	5	Dysentery	1
Septicæmia and dysentery ...	1		

The record of the experience in the Boer war had impressed on us the value of conservative treatment in the case of compound and gunshot injuries, and our general results confirmed this idea. Except for tetanus cases only 7 amputations were performed, and of these 5 proved fatal. It is true that our statistics for fracture and other cases do not compare favourably with those published on the South African war, but this seems to be due to the special conditions, which we have described above, in evidence during the early part of the Balkan campaign. The irregular nature of the transport and the inadequate immobilisation of fracture cases were also important factors tending to cause the infection and irritation of broken bones. On arrival at the base men with fractured femurs seldom had splints applied of sufficient length to fix either hip or knee-joint; injuries to the bones of the leg frequently came in with no other support than the dressing and a bandage. The problem of providing and applying proper fixation apparatus for all lower extremity cases after a big engagement seems to be a matter of considerable difficulty. In this particular case the substitute of lashing together the limbs was not practicable on account of the incomplete transport arrangements.

When in hospital it was remarkable how badly many patients tolerated any splintage or extension arrangements. The prejudice arose from the nature of the treatment commonly employed for fractures of the bones in the country; this is usually carried out by practitioners of the nature of bonesetters, without splintage—friction with oil and early mobilisation being applied.

For our femur cases we attempted the use of a Hodgen's splint and also of an extension apparatus rigged up by the carpenter; nevertheless, in the 6 cases of which I have notes the average shortening after union amounted to 2 inches. The aluminium splints made from material in the Royal Army Medical Corps fracture-box proved useful, though to contrive them satisfactorily requires a little practice and leisure.

Amputations.

In the whole series of our cases only 11 major amputations were performed; 4 of these were for tetanus cases and the remaining 7 for compound fractures, the results of which latter class were as follows:—

Bones injured.	Recovered.	Died.
Humerus	0	2
Femur	1	2
Tibia and fibula	1	1

The fatal issue was attributed to embolism in 2, dysentery in 1, septicæmia in 1, and secondary hæmorrhage in 1.

The cases of compound fracture of the tibia and fibula did well, save for those in which tetanus arose. In infected cases, as a routine, examination and removal of obviously loose fragments was carried out. In many instances more than one operation was necessary to remove necrotic fragments, but such a course seems preferable to removing in the first instance pieces of bone which may live. We had no case of actual non-union, though in several the consolidation was slow.

Injuries of the Spine.

Seven cases of this kind were admitted; slight infection of the wound was present in 2; paraplegia was complete in 5, and partial in 2. Four cases died; 2 with complete flaccid paralysis died from bedsores and urinary infection and 2 from dysentery—in one of the latter cases laminectomy had been performed nine days before death. In 2 cases due to a shrapnel injury operation was carried out.

CASE 1.—The injury was in the dorso-lumbar region, entry on the back ½ inch from midline. Complete paraplegia; knee-jerks present on one side. Laminectomy; the track of bullet was followed and the point of entry into the dura was seen to the right of the midline. There was evidence of considerable hæmorrhage, but no actual destruction of the commencing filaments of the cauda equina seen; after removal of all visible fragments the wound was closed. The wound healed well, but no definite improvement in the paraplegia was noted before the man's death from dysentery on the ninth day.

CASE 2.—Entry left side of neck to outer side of main vessels; X rays showed ball lodged at or about the left pedicle of the sixth cervical vertebra. On admission complete paraplegia, involving arms; respiration diaphragmatic. In the course of two or three days paralysis of right arm passed off, and the right leg showed signs of recovery. The left arm and leg remained completely paralysed. Operation—laminectomy, dura opened; the bullet could not be found and no definite injury of the cord could be made out, so the wound was closed. Subsequently the man recovered considerable power in the left leg, but the arm remained paralysed. Probably the injury was outside the cord, and affected the root of the brachial plexus. The paraplegia was presumably the result of spinal concussion. Beyond weakening the man's neck the operation had probably little effect on the course of the case.

In one other case admitted with complete paraplegia from an injury in the mid-dorsal region recovery of the power in one leg was complete, and in the other partial. No operation was undertaken. This and the previous cases recorded above were the only instances of spinal concussion observed by us.

Injuries of Joints.

Of 11 cases of joint injury 8 involved the knee, 1 the shoulder, and 2 the elbow.

Of the *knee cases* seven showed no signs of suppuration within the joint, although in two the bullet lodged. The injuries in all the clean cases were due to rifle-bullet wounds, and though in all instances but one the bone had been traversed the small amount of damage done to the bones was very remarkable. Some fluid in the joint persisted till discharge in 3 cases, and in 5 some limitation of movement was left. One case proved fatal from a concurrent spinal injury.

In the *infected case* a shrapnel ball had lodged and splintered the lower end of the femur. Fragments of bone and the ball were removed and the joint was packed with gauze at regular intervals. However, on account of symptoms of septicæmia and spread of the infection amputation in the thigh was carried out five days later. Death took place from secondary hæmorrhage shortly after religature of the femoral artery.

The injury of the *shoulder-joint* was a remarkable example of traumatic excision of the joint. (Case 63.) The man was hit in the back of the left shoulder by the screw ring of the fuse of a shrapnel shell; by this a large gaping wound about 4 in. × 3 in. leading into the joint was caused, and lying loose in this cavity was the head of the humerus, cleanly detached and closely encircled by the ring. (Fig. 3.) The whole

FIG. 3.

Missile which produced injury in Case 63. *a*, Articular surface of head of humerus, the whole being exactly wedged in the ring *b* from fuse of a 4" shell. *c*, Fragment of clothing fixed between head of humerus and ring. 2/5ths natural size.

was pulled out on admission of the patient. Subsequent exploration, at which small splinters of bone and some fragments of clothing were removed, checked the suppuration, and the wound finally healed up, leaving the man with a useful arm. (Fig. 4.)

Injuries of Nerves.

With the exception of the cases in which severe infected injuries of the bones necessitated amputation only 4 cases of nerve injury were noted. They involved respectively the musculo-spiral, the sciatic, the anterior crural, and the external popliteal. The first two were associated with fractures of the humerus and femur. In both cases recovery of power was almost complete in six weeks.

The injury of the anterior crural followed a perforating rifle-bullet wound in the left groin just to the outer side of the vessels; the wounds of entry and exit were small and

dry. For three weeks the power over the thigh extensors was absent but then slowly returned, and the man was discharged six weeks after admission with fair control of the limb.

The external popliteal case was the only one operated on. The injury was a perforating wound near the head of the fibula, complete paralysis in the distribution of the nerve being present. Exploration was carried out a week after the injury; the nerve trunk was found to be intact and merely involved in the bruising. Complete recovery of power occurred within in 14 days.

FIG. 4.

Case 63, showing wound of entry at the back of the shoulder when nearly healed.

Injuries of Arteries.

Only one case of traumatic aneurysm came under treatment. The left axillary region had been perforated by a rifle bullet five days before admission; the wounds were both small and healing. Pain and weakness of the arm were present, and a pulsating swelling could be felt in the axilla; this gradually increased in size, and so four days after admission operation was undertaken. The first part of the axillary artery was exposed and tied above an aneurysm the size of a pigeon's egg, involving the second part of the vessel; a ligature was then placed below the sac by which means all pulsation was checked. The man made an uninterrupted recovery without any signs of vascular disturbance or nerve injury.

Of arterial injuries leading to immediate results, that recorded under gangrene of the leg is one; in another case a rifle-bullet wound in the right iliac fossa led to such hæmorrhage into the pelvic tissues, and apparently into the peritoneum, that the man was moribund on arrival.

Injuries of the Thorax.

In the course of this and other wars many observers have been impressed by the comparatively benign nature of this class of wound. Our figures do not entirely bear out such conclusions; they are as follows: Total number of cases, 31; fatal, 9.

Number and Character of Wounds Involving Lungs.

Rifle-bullet wounds	17	Bayonet wounds	2
Shrapnel ,, ...	12		

Number of perforating wounds	22
Number of perforating wounds in which practically no signs were present	6
Cases in which the missile lodged	8
Both sides injured (all fatal)	3

Complications.

	Recovered.	Died.
Broncho-pneumonia (severe)	5	3
Empyema	2	3
Pneumothorax	3	0
Hæmothorax (aspirated)	2	0
Surgical emphysema (extensive)	1	3
Pneumocele	1	0

The cause of death in fatal cases was allocated as follows:—

Broncho-pneumonia and empyema	3
General surgical emphysema associated with cyanosis suggestive of interstitial emphysema	1
Hæmoptysis	1
Injuries of both lungs (dyspnœa)	3
Abdominal injury	1

The incidence of severe broncho-pneumonia, which tended to spread from the seat of injury, was most marked in the early cases, their long neglect and exposure being no doubt the cause. The differential diagnosis from observation of physical signs in this class of case certainly offered a great field to the enterprising clinician. The amount of shock and distress arising from wounds of both lungs was always noticeable. All such cases which we saw proved fatal.

In regard to *treatment* a waiting attitude was adopted in all cases; exploratory aspiration was carried out in those instances where increasing dulness and persistent temperature or respiratory distress suggested it. Resection of ribs for drainage was carried out in 5 cases, 2 of which proved fatal. Bullets situated in the body wall were removed in 5 cases. Only 1 case of pneumothorax was aspirated; this condition tended to rapidly clear up as far as could be determined by rough examination.

The case of *pneumocele* occurred in a case in which the sixth, seventh, and eight ribs were shattered in the right nipple line; the missile was probably a fragment of shell, and an area of lung some 2 inches in diameter was exposed and prolapsed slightly. Local suppuration took place, but the wound healed in about four weeks, and later the chest wall became quite firm, shutting off the exposed area.

Injuries of the Abdomen.

In comparison to his activity in civil practice the surgeon in war time adopts a very passive attitude towards the abdomen. The records from previous wars have given convincing proof that any part of the abdomen may be perforated by a high velocity bullet and yet little harm ensue; at any rate, conservative treatment achieves much better results than is the case when operation is undertaken. That a rifle bullet, even when nearly spent, may do comparatively little harm in traversing the abdomen is well shown by one of our cases.

Patient admitted Nov. 13th, two days after abdominal injury; Mannlicher bullet, entry small and dry, 2 inches from the mid-line, 1 inch below the right costal margin; no exit. The bullet was felt lying with its long axis parallel to the surface just above the right iliac crest, 4 inches from the mid-line. On admission the man had abdominal pain; the liver dulness was absent, and there was general rigidity and tenderness of the abdomen; there was no vomiting or diarrhœa. The man was kept on a fluid diet and hot fomentations were applied to the abdomen; the pain and distension passed off in two or three days and without further complication, the man was discharged on Dec. 3rd. At his request the bullet was removed under local anæsthesia on Nov. 23rd.

Shrapnel injuries and cases with wounds of the explosive type, if they involved the intestines, gave little hope of recovery.

The following table gives an outline of our cases of abdominal injury:—

Wound of the abdominal wall only	2	Wound of bladder	1
		,, spleen...	2
		,, kidney	2
Presumed wounds of the intestines	15	Pleura involved also	3

Total number of cases, 20; fatal cases, 11.

Six cases were operated on; all of them except one proved fatal. The non-fatal case was carried out for a fistula after an injury to the rectum. Of the fatal cases, one was an exploration after an injury of the liver for a suspected abscess. Three exploratory laparotomies were performed; one case operated on 24 hours after injury died on the table. Details of the other two are as follows:—

Patient admitted Nov. 18th. Hit by shrapnel about 24 hours previously. Entry only, breaking tenth rib 3 inches from mid-line, left side. On admission signs of shock; hæmaturia, great abdominal distension, general rigidity, and pain. Immediate laparotomy; slight fluid exudate and fæcal odour; neither the ball nor the injured piece of intestine was found; the latter was thought to be the splenic flexure of the colon, and drainage to this area along the track of the bullet was carried out. Death two days later with signs of general peritonitis.

Patient admitted 36 hours after injury on left side of abdomen; entry only. Laparotomy; a laceration was found in the descending flexure of the colon, partly shut in by adhesions. Drainage to the infected area was carried out. Death four days later with signs of general peritonitis.

One case of rifle bullet wound developed a localised abscess; death unfortunately occurred from dysentery 14 days later.

Patient admitted Nov. 8th; 10 days' history. Rifle bullet wound entry 1 inch above McBurney's point; exit in right loin 5 inches from mid-line; wounds small and similar, covered with dry scabs. Prominent inflammatory swelling under entrance wound about 4 inches in diameter. Laparotomy on Nov. 9th; pus, but no fæcal matter evacuated; tube left in for drainage three days. The man improved

in general till Nov. 14th, when diarrhœa and vomiting came on; there was no evidence of extension of the peritonitis. Round worms (not uncommon among our cases) were brought up in large numbers. The local condition remained practically stationary; death on Nov. 18th was attributed to the effect of the diarrhœa.

With regard to the other fatal cases, general peritonitis was the apparent cause of death in all. No doubt many cases of this type died soon after their injury, or at any rate before they could reach a base hospital. Those which survived the first few days of transport but ultimately died, often lingered on for five or six days; two with signs of general peritonitis survived 10 and 14 days respectively.

The case of prolapse of omentum from the wound was as follows:—

Patient admitted Nov. 22nd, three days after injury; Mannlicher bullet wound. Entry left loin, dry, 5 inches from mid-line; exit a slit ¾ inch in length in left hypogastric area 2 inches from mid-line. Prolapsed through the latter wound was a pedunculated piece of omentum 3 inches in length; there was an inflammatory swelling palpable over an area about 3 inches in diameter deep to the wound. The omentum was tied and cut off flush with the skin and a dry dressing applied. There was slight purulent but no fæcal discharge from the wound for some days, but the inflammatory mass did not appreciably alter in extent. Diarrhœa and vomiting commenced on Nov. 23th, and the man died on Dec. 4th without any definite evidence of peritonitis being observed.

As the course of the latter two cases suggests, we think that the presence of dysenteric conditions at the time of or soon after the receipt of an abdominal injury must greatly prejudice the chances of recovery.

In conclusion, in commenting on this outline of our experience, it is to be admitted that no appreciable advance in the methods of dealing with gunshot wounds has been made. The conditions of war give little scope for specialised surgery; they do but call for a sound grasp of the simple principles of wound treatment and a due application of common sense. The possibilities for future advance must lie in a more ideal application of the rules of general hygiene in camp and on the march. To effect this purpose every man in the army must be educated to appreciate the vital importance of those principles.

BRITISH PHARMACEUTICAL CONFERENCE: JUBILEE MEETING IN LONDON.

THE fiftieth annual meeting of the British Pharmaceutical Conference was held in London on July 21st to 23rd and was attended by pharmacists from all parts of the country, many of whom were the official delegates of local associations, and by representatives of pharmaceutical organisations in Australia, France, Germany, Holland, and elsewhere. The first function was a reception at the Guildhall, the members being received by the chairman of the local committee, Mr. Edmund White, President of the Pharmaceutical Society, and Mrs. White, and the President of the Conference, Mr. John C. Umney and Mrs. Umney. The Lord Mayor and other civic dignitaries and a number of medical men were present. On Tuesday the members assembled at the Holborn Restaurant, which was the headquarters of the Conference, and after addresses of welcome had been made Mr. Umney delivered his presidential address.

President's Address.

The President dealt in considerable detail with the question of the revision of the British Pharmacopœia. At the outset Mr. Umney, who is a member of the Committee of Reference in Pharmacy (which assists the Pharmacopœia Committee of the General Medical Council), said that the British Pharmacopœia of 1914 was almost ready for publication, and in connexion with the revision of that work the Committee of Reference in Pharmacy, nominated by the councils of the Pharmaceutical Societies of Great Britain and Ireland, had done its work to the best of its ability, and in all loyalty to the General Medical Council; but he was confident that it was the last occasion upon which pharmacists would aid in the revision of the British Pharmacopœia on the conditions which now obtain. He hoped there would be no apprehension on this point in the minds of the General Medical Council or of the medical profession generally. He then proceeded to describe how revision and publication of the Pharmacopœia are managed in this country, and to describe how the national pharmacopœia is prepared in various foreign countries, placing particular emphasis on the fact that on the continent medicine and pharmacy are almost equally represented officially on the respective committees of revision. Mr. Umney did not question that the rights of the General Medical Council to publish the British Pharmacopœia could only be overruled by an Act of Parliament. It had been alleged that the General Medical Council had no power to elect members of the Pharmaceutical Society or nominate members of the Pharmaceutical Society on the Pharmacopœia Committee, so that the Committee of Reference in Pharmacy holds a subordinate position. In his view, however, the Medical Act of 1858 and the subsequent Act of 1862 do not confirm this statement, for the only duty placed upon the Council by statute is that of producing the Pharmacopœia under its supervision and authority, and there are no regulations as to who shall help, or the position of authority or otherwise that shall be given to those who do help. Moreover, pharmacists were on the first British Pharmacopœia Committees, Mr. Peter Squire being associated with the London, and Mr. James Robertson with the Edinburgh one. The question was how the modern pharmacist might secure the position in the making of a Pharmacopœia such as their *confrères* in every other country have. It has been suggested that it might be possible, now that the State had recognised both departments of medicine, that the Government might introduce a measure dealing with the subject, but the Government at the present time had its hands full of promised legislation, and from a Parliamentary point of view, perhaps the position was not opportune. He suggested, therefore, that the Pharmaceutical Society should give its most earnest and careful consideration to a Bill laying down the conditions under which future pharmacopœias should be revised and submit it, with a petition, to the Privy Council, in the hope that the Privy Council might see fit to introduce such a Bill into Parliament. Failing that, it would, he thought, be advisable that the Bill should be introduced into Parliament by the Parliamentary secretary of the Pharmaceutical Society. Finally, he submitted the text of a draft Bill providing for the publication of a British Imperial Pharmacopœia and for its periodical revision, which he thought might serve as the basis of the measure suggested. This draft Bill provides for the setting up of a Commission, to be called "The British Imperial Pharmacopœia Commission," consisting of the following members:—Six duly qualified medical practitioners, two of whom shall have had personal experience of general practice, to be nominated by the General Medical Council; the professor of Pharmaceutics in the School of Pharmacy of the Pharmaceutical Society of Great Britain; three registered pharmacists, one of whom shall have had practical experience in the wholesale commerce of drugs and in the manufacture of pharmaceutical preparations on a large scale, to be nominated by the Council of the Pharmaceutical Society of Great Britain; two registered pharmacists, to be nominated by the Council of the Pharmaceutical Society of Ireland; one duly qualified medical practitioner, who shall have had personal experience of medical practice in the Indian Empire, to be nominated by the Secretary of State for India; one registered pharmacist, who shall have had personal experience of pharmaceutical practice in the Empire of India, to be nominated by the Secretary of State for India; one duly qualified medical practitioner, who shall have had personal experience of medical practice in a British colony, to be nominated by the Secretary of State for the Colonies; one registered pharmacist, who shall have had personal experience of pharmaceutical practice in a British colony, to be nominated by the Secretary of State for the Colonies; the chief Government chemist; one analytical chemist, who shall have held an appointment as public analyst to a county or borough authority for not less than ten years, to be nominated by the Council of the Institute of Chemistry of Great Britain and Ireland; and a barrister-at-law of not less than five years' standing, to be nominated by the Treasury.

The Scientific Section.

Among the interesting papers read before this section may be mentioned one by Mr. R. Clode Guyer on the Possible Iodine Standardisation of Thyroids for Pharmaceutical Purposes; one by Professor Van de Wielen, of Amsterdam, on the Standardisation of Opium; and one entitled "The Myrrh of Commerce," by Mr. E. M. Holmes, curator of the museum of the Pharmaceutical Society.

THE SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE (1913).

SECTION OF THERAPEUTICS.

THE Section of Therapeutics comprises also the subjects of Pharmacology, Physiotherapy, and Balneology. It is under the presidency of Sir Lauder Brunton, Bart., F.R.S. The secretaries are Professor W. E. Dixon, F.R.S., Dr. Fortescue Fox (for Physiotherapy and Balneology), and Dr. R. A. Young (acting secretary).

The meetings of the section will be held in Room 36 (the Astro-physics laboratory) of the Imperial College of Science and Technology, South Kensington. A laboratory meeting is also being arranged to take place in the Pharmacological Institute of University College, by kind permission of Professor A. R. Cushing, F.R.S., one of the vice-presidents of the section. Facilities will be offered for the experimental illustration of any of the special papers which lend themselves to it.

The following discussions have been arranged:—

1. Thursday, August 7th, on Defensive Measures of the Organism against Foreign Substances in the Blood, to be opened by Professor Paul Heger, of Brussels, and Professor E. Abderhalden, of Halle. Professor Ehrlich and Professor J. B. Leathes have expressed their willingness to take part in the discussion.

2. Friday, August 8th, on the Action and Use of Remedies for Pain and Sleeplessness (excluding anæsthetics, local and general), to be opened by Professor Hans Meyer, of Vienna, and Professor A. R. Cushing, of London. Dr. R. B. Wild, Dr. Robert Jones, and Dr. Risien Russell have also agreed to speak on this subject.

3. Monday, August 11th, on the Comparative Value of Cardiac Remedies, to be opened by Professor R. Gottlieb, of Heidelberg, and Dr. Theodore C. Janeway, of New York, U.S.A. Professor Ferrannini (Camerino) and Dr. J. D. Windle are also expected to join in this discussion.

4. Tuesday, August 12th, on Thermal Treatment, its Indications, Limitations, and Risks, to be opened by Professor Landouzy, of Paris, and Professor Vinai, of Turin. Dr. Zagner, of Berlin, will also take part.

The afternoon sessions will be devoted to the reading and discussion of independent papers. The morning of the day (Saturday) on which the laboratory meeting is held will also be available for papers on the subjects of balneology and physiotherapy. A considerable number of papers have been offered to the section, but as yet few have been received from British observers.

It is proposed to hold the sectional dinner on Friday, August 8th, at the Mitre Hotel, Hampton Court. The arrangements in regard to this are being made by Dr. O. F. F. Grünbaum.

A ladies' committee is being formed to assist in the entertainment of the foreign ladies attending the Congress.

SECTION OF DERMATOLOGY AND SYPHILOGRAPHY.

The Section of Dermatology and Syphilography is under the presidency of Sir Malcolm Morris, K.C.V.O., and the meetings will take place at St. Thomas's Hospital Medical School.

The section is greatly indebted to the treasurer and governors of St. Thomas's Hospital for their generosity in granting the use of the school buildings, and to Dr. E. Stainer, the dean, for his assistance in regard to the arrangements. The place is an ideal one for the purpose. The large meetings are to be held in the hall of the hospital, while the smaller meetings will take place in the two theatres in the school. Ample accommodation is also afforded for the museum of models and illustrations, for the exhibition of microscopical specimens, and for the demonstration of rare cases of cutaneous disease. The Students' Union will be used as a club, and the Terrace will be a pleasant meeting-place for the members, and give our foreign guests an opportunity of appreciating one of the most attractive scenes in all London.

The subjects which have been selected for discussion are the following: 1. Epithelioma of the Skin, Benign and Malignant, which will be introduced by Dr. Darier, of Paris, who reported on the same subject at the Dermatological Congress in Berlin in 1904, and who will record the advances made in the subject since then; the other reporters are Dr. J. A. Fordyce, of New York, and Dr. Jadassohn, of Berne. 2. A discussion on Alopecia Areata and Allied Conditions will be opened by Professor Pellizzari, of Florence, and Dr. Sabouraud, of Paris. 3. A discussion on Syphilis, its Dangers to the Community, and State Control, conjointly with the Section of Forensic Medicine; this will be introduced by Professor Finger, of Vienna, Professor Gaucher with Dr. Gougerot, of Paris, Dr. Blaschko, of Berlin, and Major H. G. French, R.A.M.C. As this subject is of the greatest importance to the general health of the community it is expected that the meeting will attract a large number of members, and consequently it has been decided to hold it in the Albert Hall on Saturday, August 9th, at 9.30 A.M. 4. A conjoint discussion with the Section of Naval and Military Medicine on the Treatment of Syphilis by Salvarsan and Allied Substances, which will be opened by Professor Ehrlich, of Frankfort, Professor Neisser, of Breslau, and Professor Vennin, of Paris, while this country will be represented by Major T. W. Gibbard and Major L. W. Harrison, R.A.M.C. 5. A discussion on the Vaccine Treatment of Diseases of the Skin, which will be introduced by Professor T. C. Gilchrist, of Baltimore, and Professor Arthur Whitfield, of London.

A large number of papers have been accepted by the council of the section, some dealing with the subjects under discussion, while others are on independent subjects of special interest. These papers will be read and discussed at the afternoon sessions of the Congress.

Special attention will also be paid to the clinical aspect of the subject, and demonstrations of interesting cases will be held before the morning and afternoon sessions. These cases will be grouped as far as possible to illustrate the subject under discussion on each day.

Arrangements are now being made for the entertainment of the members. On account of the large number who are expected it has been found necessary to abandon the idea of a sectional dinner, and it has been decided instead to hold a reception at Prince's Restaurant on Monday, August 11th, at 9 P.M. A garden party will take place at St. Thomas's Hospital on one of the afternoons, to which members of this section will be welcomed. In addition to this, and the private hospitality which will be extended to individual members, an influential ladies' committee has been organised, under the direction of Lady Morris, to provide entertainment for the wives and daughters of the members.

The secretaries of the section are Dr. R. Cranston Low (editor of Transactions), Dr. J. M. H. MacLeod (acting secretary), Dr. H. Leslie Roberts (provincial secretary), and Dr. J. H. Sequeira (secretary in charge of museums and clinical demonstrations).

SECTION OF ANATOMY AND EMBRYOLOGY.

The President of this section is Professor Arthur Thomson (Oxford); the Vice-Presidents are Professor A. Macalister, Professor R. W. Reid, Professor J. Symington, Professor J. T. Wilson, and Mr. C. B. Lockwood, and the secretaries Professor R. Howden and Dr. Alexander Macphail.

The number of set discussions is five. For the first, to be held jointly with the General Pathology Section, on the Excitatory and Muscular Connecting System of the Heart, Professor Külbs (Berlin) has been nominated as reporter by the council of the section. The other four discussions are confined to the Section of Anatomy, and the subjects chosen are the Early Stages of the Human Ovum (reporter, Professor A. C. F. D'Eternod, Geneva), the Morphology of the Sympathetic System (reporter, Professor Carl Huber, Ann Arbor, U.S.A.), the Morphology of the Shoulder Girdle (reporter, Professor Raoul Anthony, Paris), and Cerebral Localisation and the Precise Significance of Sulci (reporter, Professor C. U. Ariens Kappers, Amsterdam).

These discussions will be held at the morning meetings of the section in the Organic Chemistry Theatre, Imperial College of Science and Technology, and will be followed by a number of independent papers, which have been offered by the President of the Section, Professor McClure (Princeton, N.J.), Professor Huntingdon (New York), Dr. Aubrey Mussen (München), Professor F. G. Parsons (London), Dr. Koch (Berlin), Professor Ramstrom (Upsala), Dr. Shirokogoroff (Dorpat), Dr. F. Wood-Jones (London), Professor A. Campbell Geddes (Dublin), Dr. Albert Wilson (London), and Professor A. Dustin (Brussels), and several other communications of this order are expected in addition. The council

propose that the afternoon meetings be held in the museum of the Congress in the form of informal demonstrations and discussions on the exhibits of anatomical interests which will be on view there.

The dinner of the section will be held in the Great Hall of St. Bartholomew's Hospital on the evening of Friday, August 8th; an informal "At Home" will be given to the members of the section by the President on one of the earlier evenings of the Congress.

The acting secretary is Dr. Macphail, St. Bartholomew's Hospital, London, to whom titles of papers and demonstrations should be forwarded without delay.

SECTION OF DISEASES OF CHILDREN.

The meetings of the section are to be held at the Royal Society of Medicine, 1, Wimpole-street, W.

The following discussions have been arranged for the morning sessions:—

Thursday, August 7th: The Treatment of Tuberculosis in Childhood from the Surgical Point of View, with especial reference to the Bones, Joints, and Glands. Reporters, Dr. Menard (Berck-sur-Mer, France) and Mr. H. J. Stiles (Edinburgh).

Friday, August 8th: Mortality in the First Few Weeks of Life. This discussion is to be held in conjunction with the Section of Obstetrics and Gynæcology and the Section of Hygiene and Preventive Medicine. Reporters, Dr. Koplick (New York, U.S.A.), Dr. A. K. Chalmers (Glasgow), and Professor Wallich (Paris).

Saturday, August 9th: Effects of the Ductless Glands on Development. Reporter, Professor Dr. Rudolph Fischl (Prague, Bohemia).

Monday, August 11th: Infection of the Urinary Tract with Colon Bacilli. Reporters, Dr. John Thomson (Edinburgh) and Professor Valagussa (Rome).

Tuesday, August 12th: Polioencephalitis and Poliomyelitis. Reporter, Professor Romer (Marburg, Germany.)

Papers for the afternoon sessions have been accepted, from the following authors:—Professor Jonkorsky (Dorpat Russia): Infantile Mortality in the First Month of Life, Contribution to the Clinical, Anatomical, and Pathological Study (Personal Observations). Dr. Coit (Newark, U.S.A.): The Viability of Children Deprived of Women's Milk During the First Year. Professor J. Comby (Paris): Encephalite Aigué chez les Enfants. Dr. D. B. Lees (London): Diagnosis of Pulmonary Tuberculosis in Childhood. Dr. Gauvain and Dr. Calvé (Berck-sur-Mer): Tuberculosis in Childhood. Dr. L. Findlay (Glasgow): Portals of Entry of the Tubercle Bacilli. Professor Cacace (Naples): Fermented Milk in Pædiatrics. Dr. Siegfried Weiss (Vienna): A New Symptom of Scurvy.

It is proposed on one afternoon to exhibit some interesting cases at one of the Hospitals for Children in London, and it is hoped to arrange for all the Children's Hospitals in London to be open to the visits of members of the section during the period of the Congress.

Arrangements have been made to visit the Lord Mayor Treloar Cripple Hospital at Alton, in Hampshire, on August 9th, and special excursions are also being arranged to the Idiots' Asylum at Earlswood, to the Carshalton Hospital, and other of the hospitals under the Metropolitan Asylums Board.

The President of the section is Dr. Eustace Smith and the acting secretary Dr. A. M. Gossage, 54, Upper Berkeley-street, W.

SECTION OF FORENSIC MEDICINE.

This section is under the presidency of Professor H. Harvey Littlejohn, and will meet in the senate room of the London University.

The following discussions have been arranged:—

Thursday, August 7th: 1. The Medico-Legal Aspects of Infant Mortality. Reporters: Professor Etienne Martin and Professor Mouriquand, Lyons; and Professor Dr. F. Strassmann, Berlin.

Friday, August 8th: 2. The Teaching of Forensic Medicine, including the Construction and Equipment of a Medico-legal Institute. Reporters; Professor L. Thoinot, Paris, and Professor Dr. H. Zangger, Zürich.

Saturday, August 9th: 3. Syphilis: its Dangers to the Community, and the Question of State Control. (Jointly with the Section of Dermatology and Syphiligraphy in the Albert Hall.) Reporters: Professor Dr. A. Blaschko, Berlin; Professor Dr. Ernst Finger, Vienna; Major H. C. French, R.A.M.C.; and Professor Gaucher and Dr. Gougerot, Paris.

Monday, August 11th: 4. Alcohol and Degeneracy. Reporters: Dr. Max Bratt, Stockholm; Dr. Benno Laquer, Wiesbaden; and Dr. Legrain, Paris.

Tuesday, August 12th: 5. The Psychology of Crime. (Jointly with the Section of Psychiatry in the Jehangir Hall, University of London.) Reporter: Professor Comm. E. Morselli, Genoa; and Professor Dr. Weygandt, Hamburg.

The President is giving a dinner to a large number of members on August 7th. Dr. J. Baker has kindly arranged to take a party over Broadmoor Criminal Lunatic Asylum on August 12th. Visits have been arranged to the museum and finger-print department of Scotland Yard. Members will be afforded facilities for visiting certain of H.M. prisons, and several of the London coroners have promised to admit members to any inquests they may hold during the Congress. A ladies' entertainment committee has been formed.

The secretary of the section is Dr. W. A. Brend.

SECTION OF MEDICINE.

The dinner of the Section of Medicine will be held at the Connaught Rooms, Great Queen-street, Kingsway, London, W.C., on Friday, August 8th, at 7.15 precisely. Tickets, price 25*s.* (including wine and cigars), may be obtained from Mr. George Bethell, 11, Chandos-street, Cavendish-square, W., and after August 5th also at the Royal Society of Medicine, 1, Wimpole-street, W., where the meetings of the section will be held. Dinner tickets will not be obtainable at the Albert Hall, as announced in a previous notice.

THE ROYAL SANITARY INSTITUTE.

THE Fourth Congress of the Sanitary Institute was held in Exeter in the year 1880, and after the lapse of 33 years another most successful meeting of the institute was held in that city from July 7th to 12th last. The business at the earlier congress was divided between three sections, dealing respectively with sanitary science and preventive medicine, engineering and sanitary construction, and meteorology and geology. At the last meeting meteorology and geology were unprovided for, but there were additional sections concerned with domestic hygiene and the hygiene of infancy and child study. There were also five conferences of municipal representatives, medical officers of health, engineers and surveyors, veterinary inspectors, and sanitary inspectors respectively. The need for these additional sectional meetings alone shows how largely hygiene has entered into every side of present-day existence.

Housing Question.—Immunity.

The President of the 1880 congress was the late Earl Fortescue, who was long identified with measures of sanitary reform, and the latest congress was fittingly presided over by the present Earl, who dealt in his presidential address in a very practical manner with the question of rural housing. He advocated letting cottages at an economic rent, and in consequence paying labourers accordingly, leaving landowners to provide sufficient cottages for the requirements of tenant farmers, and requiring the local authorities to provide housing accommodation for old-age pensioners and for those whom he described as "nobody's children," such as policemen, roadmen, and village tradesmen. Discussions on housing occupied a prominent place in the sectional meetings, though there was no unanimity as to the solution of the problems involved, the only agreement being that there must either be State aid, rate aid, or a rise in the labourer's wages. The housing question and the prevention of tuberculosis were admittedly bound up with one another, and Mr. H. R. Aldridge, in urging the provision of suitable homes for persons suffering from, or liable to suffer from, the disease, asserted that for the cost of one patient in a sanatorium five or six families could be housed in sanitary homes.

The question of immunity was referred to at some length by Mr. A. Wynter Blyth in his presidential address delivered in the section of Preventive Medicine. After tracing the various theories of immunity from their inception to the practical results accruing, he showed how the indirect methods of making the body resistant or immune by passing life as much as possible in the open air, at first applied only to invalids, was obviously applicable to the healthy, and

how the open-air education now being advocated would have a profound influence on the habits of the future generation. The same question was incidentally referred to by Professor J. Penberthy, F.R.C.V.S., who presided over the Veterinary Conference. He evidently viewed with some favour the suggestion recently put forward, that the infection in early childhood by bovine bacilli through milk or food may be the means of creating immunity to human tuberculosis in later years. In this conference a resolution was passed at the close of the discussion on Slaughter-houses, introduced by Dr. Herbert Peck, advocating the establishment of public slaughter-houses.

Tuberculosis.

The principal discussion on Tuberculosis was introduced by Dr. Arthur Latham, who deplored the use to which the grant for sanatorium benefit was being put. Food, fuel, overcoats, underclothing, &c., were being provided out of the fund, so that the real object of sanatorium benefit, the prevention of the disease, was being severely handicapped. He criticised the appointment of medical officers of health as tuberculosis officers, and maintained that in too many instances the treatment of patients had been carried out by men of no special experience in the disease who were supervised by administrative and not by clinical experts. Dr. Duncan Forbes dealt with the question from the point of view of the medical officer of health, and urged that treatment alone was not a serious factor in any scheme, but that the most effective work could be done by improved feeding and housing, by the education of the individual consumptive, and by the refusal of treatment and other comforts except on condition that the simple rules for the prevention of infection were implicitly obeyed.

The domiciliary treatment of tuberculous patients was discussed by Dr. J. D. Macfie, one of the tuberculosis officers of the Essex county council, in a thoughtful paper. Tuberculosis, he said, must not be taken away from the general practitioner, whose intimate knowledge of the family was of considerable value and whose help should be cordially invited. Domiciliary visitation and examination of every notified case was the only way of dealing effectively with tuberculosis. In this connexion in a paper read before the conference of Medical Officers of Health, Mr. Herbert Jones referred to the obligation placed upon medical officers of health by the latest tuberculosis regulations to visit the homes of notified cases of the disease, and to the fact that this additional duty meant a considerable extra expenditure in travelling expenses to those officers who had no travelling allowance. He considered that this expenditure should be borne by the central and not by the local authority.

Other Discussions.—Exhibition of Sanitary Appliances.

Among other questions discussed were the Milk and Dairies Bill, water-supplies from rivers, the lighting and ventilation of hospitals, and domestic labour-saving appliances. As usual at these congresses there was brought together an exhibition of sanitary and other appliances, among which were excellent exhibits of electric cooking and of gas cooking. The number of delegates present at the congress was about 800, and the sectional meetings were all well attended, in some cases the meeting-rooms provided proving too small to accommodate those who desired to be present. With very few exceptions the discussions were well sustained and distinctly helpful. The congress of the institute is to be held at Blackpool next year during the second week in July.

LITERARY INTELLIGENCE.—Messrs. J. and A. Churchill announce a new work, entitled "Researches on Rheumatism," by Dr. F. J. Poynton and Dr. Alexander Paine. The same firm has ready for early publication the eleventh edition of Swayne's "Obstetric Aphorisms," which is now edited by Dr. W. C. Swayne, professor of obstetrics in the University of Bristol; also the seventh edition of "The Microtomist's Vade Mecum," by Mr. A. B. Lee; the sixth edition of the late Professor Campbell Brown's "Practical Chemistry," edited by Dr. Bengough; and the third edition of "A Text-book of Physics," edited by A. Wilmer Duff.

THE FINAL REPORT OF THE LUANGWA SLEEPING SICKNESS COMMISSION.

EARLY in 1911 the British South Africa Company appointed a commission to inquire into the subject of trypanosomiasis, and especially to find out what was the transmitting agent of sleeping sickness in those parts of north-eastern Rhodesia and Nyasaland where the usual vector of the infection, Glossina palpalis, did not exist. The commission comprised Dr. Allan Kinghorn and Dr. Warrington Yorke, of the Liverpool School of Tropical Medicine, as medical members, and Mr. Llewellyn Lloyd as the entomological expert. The investigations were carried out during 1911 and 1912, the headquarters of the commission being established at Nawalia in the Luangwa Valley for the most of the time, but being removed for a short period to Ngoa, on the Congo-Zambesi watershed, in order that some experiments might be made with a view to determine what influence, if any, climatic conditions had upon the transmission of sleeping sickness. Several interim reports have already been published, but it was thought desirable to collect and correlate all the results in a final report, and this has now appeared in the *Annals of Tropical Medicine and Parasitology* (Series T.M., Vol. VII., No. 2).

Transmission of Trypanosoma Rhodesiense by Glossina Morsitans.

The labours of the commission have placed it beyond dispute that the species of tsetse fly which acts as the true transmitter of the particular sleeping sickness parasite, Trypanosoma rhodesiense, in the Luangwa Valley is Glossina morsitans, the same fly that acts as the vector of the infection of nagana, a form of trypanosomiasis met with in South Africa among domestic stock. Unfortunately G. morsitans appears to have a distribution far wider than that of G. palpalis, which had until recently been regarded as the sole transmitter of the virus of sleeping sickness. The incrimination of G. morsitans, too, adds a further difficulty to the eradication of the disease. The fact was also established upon trustworthy evidence that a considerable percentage of wild animals in the Luangwa Valley are infected by T. rhodesiense, more particularly the various kinds of antelope, and that they are therefore acting as reservoirs of the sleeping sickness virus. There seems to be no essential difference between the clinical manifestations of the human malady caused by the parasite, T. rhodesiense, transmitted by G. morsitans, and that form due to T. gambiense, of which G. palpalis is the vector, except, perhaps, that the former is more virulent than the latter. Approximately, about 3·5 per cent. of G. morsitans in the Luangwa Valley may become permanently infective and capable of conveying the disease to man. The period which elapses between the infecting feed of the flies and the date on which they become infective varies from 11 to 25 days. The special experiments made at Ngoa, on the Congo-Zambesi plateau, respecting the transmission of T. rhodesiense by G. morsitans during the cold season were invariably negative. The developmental cycle of the trypanosome in this tsetse fly is influenced to a marked degree by the temperature to which the insects are subjected. High temperatures (75° to 85° F.) favour development of the parasite, while low temperatures (60° to 70° F.) are unfavourable. The first portion of the developmental cycle can proceed at a lower temperature, but for its completion the higher temperatures are essential. It is somewhat remarkable that the parasites may persist in the fly in an incomplete stage of their development for at least 60 days under favourable conditions. These observations would seem to afford an adequate explanation of the extremely long latent periods of trypanosomes in glossina occasionally noticed by other investigators. The relative humidity of the air has apparently no influence on the development of the trypanosome in G. morsitans.

Transference of Virus.

As has been already stated, the chief reservoir of the sleeping sickness virus in the Luangwa Valley is found in the antelopes; on the other hand, careful search failed to find the human trypanosome in a large number of monkeys, wild rats, and mice which were examined. Trypanosomes of various kinds are common in the blood of wild game and domestic stock in the area in question, and the commissioners

say that as a conservative estimate 50 per cent. of big game in the Luangwa Valley and 35 per cent. at Ngoa are infected with trypanosomes pathogenic to man and cattle. With regard to the actual transference of T. rhodesiense by G. morsitans, it was shown that this could only occur if the salivary glands of the fly were infected. The first part of the developmental cycle of the trypanosome takes place in the gut of the fly, and in order to complete it and to secure invasion of the salivary glands a relatively high mean temperature (75° to 85° F.), as already indicated above, is necessary. Invasion of the salivary glands was only found in flies infected with T. rhodesiense. The predominant type of trypanosome in the intestines of infected G. morsitans, a large broad form, is quite different from that which predominates in the salivary glands, where the parasite resembles somewhat the short form seen in the blood of the vertebrate host. Both the intestinal forms and those found in the salivary glands of infected G. morsitans are virulent when inoculated into healthy animals.

Relationship of Big Game.

One of the commissioners, Dr. Yorke, has recently contributed a paper to the Proceedings of the Zoological Society of London on the Relationship of the Big Game of Africa to the Spread of Sleeping Sickness, and on the basis of his experiences in the Luangwa Valley he urges the advisability of attempting to exterminate the big game in the vicinity of human habitations. He is convinced, apparently, that if anything is to be done to prevent the extension of trypanosomiasis in man and domestic stock in South Central Africa, where he has been making his investigations, it should be done in the direction of destroying the reservoirs of the virus from which G. morsitans derives the infection. To this end he suggests that the present restrictions as to the killing of game by native hunters and Europeans should be removed in certain areas as an experiment. He believes that the sources of the trypanosomic infection would be greatly reduced in amount through the killing of the animals which at present serve as the reservoirs of the virus, and consequently the risks run by human beings of contracting the terrible malady of sleeping sickness would be greatly lessened.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following are among the amounts received at the Mansion House to date. Total available for distribution about £52,000.

	£	s.	d.
West London Synagogue	289	0	0
Holy Trinity, Sloane-street	285	0	0
Christ Church, Mayfair	133	0	0
St. Paul's, Avenue-road, N.W.	117	0	0
Victoria Park Christian Evidence Association	100	0	0
Ascension Church, Lavender Hill	52	0	0
Wandsworth Parish Church with Holy Trinity	52	0	0
J. H. Vavasseur and Co., Limited	52	0	0
St. Matthew's, Denmark Hill	41	0	0
German Church, Camberwell	40	0	0
St. Gregory's, Earlsfield	40	0	0
St. Mary's, Aldermary	39	0	0
St. Michael's, Blackheath	35	0	0
Christ Church, Chelsea	35	0	0
St. John's, Notting Hill	34	0	0
St. John's, Kennington	31	0	0
St. Gabriel's, Cricklewood	30	0	0
St. Ann's with St. Andrew's, Stamford Hill	29	0	0
Heath-street Baptist Church, Hampstead	29	0	0
All Saints, Blackheath	29	0	0
St. Mary's, Ealing	28	0	0
St. James's, Holloway...	28	0	0
Holy Redeemer, Stoke Newington	27	0	0
Christ Church, North Brixton	26	0	0
St. Simon's, Paddington	26	0	0
St. Mildred, Lee...	25	0	0
St. Margaret's, Plumstead	24	0	0
Whitefields Tabernacle	24	0	0
St. Michael's, Highgate	24	0	0
Lewisham High-road Congregational Church	24	0	0
All Saints, Highgate	24	0	0
St. Andrew's, Stoke Newington	22	0	0
St. Mark's, Kennington	21	0	0
St. John's, Palmers Green	21	0	0
St. Pancras Parish Church	21	0	0
St. Mary's, Finchley	21	0	0
Worshipful Company of Vintners	21	0	0
Ferme Park Baptist Church, Hornsey	20	0	0
St. Jude's, Kensal Green	20	0	0

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

Annual Meeting.

THE annual meeting of the association was held at the rooms of the Medical Society on July 16th and 17th, under the presidency of Dr. J. G. Soutar, and later that of the new President, Dr. James Chambers. The morning session was occupied with the business of the association. Satisfaction was expressed at the successful work of the subcommittee deputed to watch the progress of the Mental Deficiency Bill, and its chairman, Dr. T. B. Hyslop, was specially thanked. The first function of the afternoon was the formal presentation by Dr. Soutar, on behalf of the association, to Dr. H. Hayes Newington, of his portrait in oils, the work of Mr. W. W. Ouless, R.A., and a testimonial on vellum, the occasion being Dr. Newington's fortieth year of connexion with the association, of which he has been president and chairman of the Parliamentary Committee, and of which he is now treasurer.

After hearty votes of thanks to the retiring president, Dr. Chambers was inducted to the presidential chair, and his first function was to present the Gaskell prize to Dr. Rees Thomas, of East Sussex Asylum, and the Bronze medal to Dr. Mackinley Reid, of Horton Asylum. Dr. Chambers then delivered his presidential address, taking as his subject

The Prevention of the Insanities.

He said that since the study of rational preventive methods must be largely concerned with causation the starting point was clearly indicated. In this investigation he believed that he was inevitably concerned not merely with cause, but with purpose, and that the complete answer to the Why? that eternally confronted us was only obtained when the existence of ultra-mechanistic factors was admitted. The complex of causative agencies which must be recognised in the case of the insanities was one which, if the phrase be allowed, had extension in two dimensions. In the delirium of typhus fever the physical agencies at work were presented in formidable rank, but in certain insane conditions which were hardly to be distinguished clinically from such delirium one had to do battle with an enemy whose Indian file issued in dim perspective from the gloomy recesses of the unknown past. In the realm of bodily development reference was made to the work of Adami and others, who had found in hormonism a possible explanation of the manner in which the doctrines of the continuity of the germ plasm and of the transmission of certain acquired characters could be reconciled. Continuing, Dr. Chambers announced his adherence to both these doctrines, and proceeded to consider the individual as progenitor, as parent, and as social unit. In the capacity of progenitor the individual was described as a mere shell for segregated germ plasm, in which determinants and unit characters were already neatly sorted out for rearrangement; regarded as parent, Dr. Chambers pointed out that a belief in the transmission of certain acquired characters opened up a vista of possibilities and required the admission of imperative responsibility. The various schemes for the betterment of the race were referred to in the light of recent theory and past experience, and it was insisted on that in order that one should interfere to the best advantage the most comprehensive survey of the many factors involved should be undertaken. Dr. Chambers emphasised the enforcement of segregation in certain well-defined circumstances, and reviewed the various functions of the already available machinery for the care of those mentally affected. He stated that the coördination and systematisation of the special agencies in the form of centres for research, psychiatric clinics and hospitals of different aim and purpose, together with that of the After-care Association were no less worthy of recognition and furtherance by the State than was the marshalling of the laboratory, the dispensary, the sanatorium, and the convalescent home or colony in the crusade against tuberculosis. In conclusion, the keynote of reliance on the evocation of that purposeful effort which, as it had earlier been shown, was now recognised by philosophers and biologists, as well as by physicians, was again struck. It was further asserted that if in the desire to frame some attractive scheme of glittering merit we are ever tempted to forget the present sufferer from mental disability and his pathetic needs, we should be reminded that for him also the

greatest hope of restoration lies in our inculcation, so far as we have the dynamic force, and he the capacity for response, of the necessity for personal effort. And when there is little or no hope that we may evoke such helpful response, in devoted care of the straggler from our ranks, there is a task not lightly to be evaded which, if accomplished, will bring with it a rich burthen of racial reward, but, if neglected, will entail an inevitable Nemesis."

Traumatic Neurasthenia.

Dr. CAMPBELL THOMSON, dean of the Middlesex Hospital, read a paper on this subject, pointing out that neurasthenia had no boundary line, its symptoms merging into psychasthenia, melancholia, obsessions, hypochondriasis, and other conditions.—Sir GEORGE SAVAGE, Dr. E. S. PASMORE, Dr. ROBERT JONES, Dr. W. F. MENZIES, and Dr. J. CARSWELL took part in an interesting discussion which followed.

The Annual Dinner.

The dinner was held at the Café Monico, London, on July 16th, Dr. Chambers presiding. The large company included the Lord Mayor of Cardiff, the President of the Royal College of Physicians of London, Sir John Jardine, M.P., Sir George Newman, Sir John Collie, Sir David Semple, Mr. Ouless, Mr. K. MacLeod, K.C., the Hon. John Mansfield, Mr. E. G. Easton (chairman of the London County Council Asylums Committee), Dr. C. Hubert Bond and Mr. A. H. Trevor (Commissioners in Lunacy), Dr. Hyslop, Dr. D. G. Thompson (President-elect), Dr. Newington, Dr. Campbell Thomson, and the honorary secretary, Dr. M. A. Collins. The toast of "The Medico-Psychological Association" was proposed by the Lord Mayor of Cardiff, who commended the good work done by the association, especially in the training and certification of mental nurses. Referring to the importance of investigation into the causes and treatment of insanity and the research work being carried out at Cardiff the Lord Mayor paid a warm tribute to Dr. Edwin Goodall. The chairman, in a brief and graceful reply, spoke of the zeal and knowledge shown by the citizens of Cardiff and expressed the hope that 1913 would be a memorable year through the passing into law of the Mental Deficiency Bill. The health of "Our Medical Brethren" was proposed by Sir James Crichton-Browne, who reminded his hearers that he was one of the oldest members of their body and had served as its president 34 years ago. He traced the history of the association from the days when it was a little coterie meeting in the vicinity of asylums and known as "the wandering lunatics." It had always adhered to scientific methods and kept abreast of scientific developments in other fields. He thought that the association was entitled to be heard upon the subject of forcible feeding in order to correct prevalent erroneous notions. He was sure that all his fellow members would agree that this procedure had saved tens of thousands of lives, and that to call it a dangerous and painful operation was grossly wrong and misleading. The toast was responded to by Sir Thomas Barlow, President of the Royal College of Physicians of London, who dwelt on the value of sympathy and comradeship between old and young members of the medical profession. While specialism was inevitable, and, indeed, one of the conditions of progress, there was all the more need for bringing the different arms of the profession into community. The health of the guests was proposed by Dr. Soutar, the retiring president, who referred to Mr. Ouless's excellent portrait of Dr. Newington, for 20 years their treasurer, which he had that afternoon presented to Dr. Newington on behalf of the association. The toast was coupled with the names of Sir George Newman, chief medical officer of the Board of Education, and Dr. G. B. Longstaff, who each replied. Finally, the health of the President was proposed by Sir George Savage and received with enthusiasm. During the evening the "Westminster Singers" gave a number of pleasing glees and part songs.

Other Communications.

On Thursday the first paper was by Dr. C. A. MERCIER. It was discussed by Sir GEORGE SAVAGE, Dr. J. CARSWELL, Dr. ROBERT JONES, Dr. STANLEY GILL, and the author replied.

Dr. H. SALTER GETTINGS read a paper on Dysentery, Past and Present, with especial Relationship to the Origin of Asylum Dysentery.

Dr. BARTON WHITE made a contribution on Bacteriological Examination of the Urine in Some Cases of General Paralysis. Dr. SOUTAR, Dr. COLLINS, Dr. S. C. HOWARD, and Dr. W. DAWSON discussed the subject, and praised the contribution.

Dr. BEDFORD PIERCE presented an interim report of the subcommittee on the condition and status of assistant medical officers in asylums, and in doing so made out a strong case for improved conditions. He showed that the number of patients assigned to each medical man was quite out of keeping with efficient attention to each patient, and stated that while the number per officer in America was 145, going up to 197 in private asylums, in England it was one medical officer to 302.

Dr. R. G. ROWS, Dr. SOUTAR, Dr. T. W. MCDOWALL, Dr. D. BOWER, Dr. H. C. THOMSON, Dr. G. CLARKE, and Dr. COLLINS debated the matter, and the report was unanimously approved and the committee reappointed.

ASYLUM REPORTS.

Bootham Park Registered Hospital for the Insane, York (Annual Report for the Year 1912).—The average number resident in this asylum was 115. During the year 1912 there were admitted 44 patients. The mean ages of those received was 50·1 years; the youngest was a man aged 21 and the oldest was a man aged 91. Excluding transfers and voluntary boarders there were 22 direct admissions, and in 14 of these a distinct history of such circumstances as worry, overwork, or shock was obtained, lending support to the belief that such factors are partly causal in the production of mental illness, probably by lowering the tone of the body generally and rendering it an easy prey to toxins and auto-intoxications. In only 2 patients was the health regarded as fair, giving strong weight to the widely accepted belief that a person who becomes ill mentally is practically always at the same time in poor bodily condition, and strongly supporting the argument that cases of recent or acute insanity should be treated by rest in bed. During the year 29 persons were discharged, of whom 16 were recovered. The proportion of recoveries to receptions was 72·7 per cent., whilst the proportion of recoveries to the total number under treatment was 10·7 per cent. The mean age on recovery was 43 years in 15 of the 16 cases; the sixteenth, an old man 91 years of age, recovered after an attack of mania which had lasted about 4⅓ months. The average duration of the illness in 15 of the 16 cases was a little over 9 months, and one patient was discharged after having been in the institution for several years. Seven deaths occurred during the year, the mean age at death being 58·2 years. At the time of death the average duration of the mental illness was a little over 8 years. We regret to note the resignation of Dr. C. K. Hitchcock, who for nearly 30 years had held the post of medical superintendent.

Cumberland and Westmorland Lunatic Asylum (Annual Report for the Year 1912).—At this asylum the daily average number resident was 849. The admissions numbered 179, the number corresponding closely with the average of the ten years preceding 1911. The ages of those admitted ranged from 11 to 76 years. Thirty had been previously under care in this asylum. The principal causative factors ascertained in connexion with the direct admissions were hereditary predisposition in 46 cases, alcoholism in 20 cases, and mental stress in 20 cases. In 49 cases no causative factor was ascertained. Ninety-five patients were discharged, 72 as recovered, 11 as relieved, and 12 as not improved. The recovery rate calculated on the direct admissions was 42·6 per cent.—a highly satisfactory proportion. 54 per cent. of those who recovered were brought to the asylum within a fortnight of the onset of their attack of mental illness, and 76 per cent. were brought within three months. Only 3 recovered whose attack had lasted over a year before admission. Dr. W. F. Farquharson, medical superintendent, points out that many cases, if treated in their earlier stages, are eminently curable, but that, more than all other diseases, mental cases require from their onset skilled supervision and care amidst proper surroundings. From mistaken, though no doubt kindly, motives relatives are apt to delay the removal of a patient

to an asylum, and too often, when at last the patient is taken there, it is found that the curable stage of the disease has passed. The disinclination of a section of the community to send their relatives to an asylum is due to two causes, both of which are removable. The first, which appears to be gradually diminishing, is ignorance as to the nature of asylums; they are in reality hospitals for the treatment of disease, conducted on the most modern lines. The second cause is the state of the law, which prevents a patient being treated in a hospital for mental disease until a reception order, signed by a magistrate, has been obtained. It is desirable that there should be an alteration in the law so that incipient cases of curable insanity could be admitted for treatment to institutions, for at least a limited time, without the necessity of obtaining a magistrate's order, the present procedure being reserved for cases that are chronic or have tendencies to be dangerous to themselves or others. Deaths numbered 63, the rate being very low—7·4 per cent. on the daily average number resident. In all cases post-mortem examinations were held.

Public Health.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Metropolitan Borough of Wandsworth.—Dr. P. Caldwell Smith's annual report for 1912 may be commended to any student of public health administration who wishes to obtain a clear impression of the multifarious nature of the work of a well-organised public health department in London and the valuable results which are secured by it. We may note a few of the various matters which make up the record of the year. The tables of house-to-house inspection under the Housing Acts show that 2674 houses were visited, of which 1875, or 70·1 per cent., contained certain deficiencies which necessitated the service of a preliminary or "intimation" notice, the highest percentage being in Streatham ward and the lowest in Putney. When to these are added the "intimation" notices served in connexion with the requirements of other Acts the total becomes 6620. The deficiencies referred to in these notices included overcrowding of persons in dwellings, want of yard paving, water-closet and drainage needing repair, defective water-cisterns and ashpits, nuisances due to keeping of animals and various other causes, and only in a relatively small number of cases was it necessary to follow them by statutory notices and legal proceedings. As many as 956 yards in connexion with dwelling-houses, and 103 in connexion with stables, were paved, drained, or cleansed; 5248 rooms and 1043 staircases and passages were cleansed or repaired, while reconstruction of house drains was carried out in 257 cases. The large amount of work carried out to abate nuisances due to dampness is noteworthy; in all, 1559 premises came under notice during the year on account of dampness, and in 596 of these damp-courses have been inserted. Dr. Caldwell Smith states that he has visited all these premises, as well as many others where damp-courses had been inserted in previous years, and is satisfied that the dampness has been quite removed and the houses rendered much healthier. The baths at the disinfecting station have become less used than formerly owing to diminution in the number of verminous children for which they are required and the cleansing provision now made at some of the County Council's elementary schools. A new slaughter-house has been licensed in Wandsworth for slaughtering horses for human food, and during the year 90 horses have been slaughtered on the premises, the meat in all cases being exported. The report gives a list of the licensed slaughter-houses in the borough and specifies the particular restrictions which are attached to various licences. Some energetic action was taken in 1912 to enforce the provisions of the Rag Flock Act, 1911, and the official regulations made under this Act which requires that the proportion of soluble chlorine in rag flock shall in no case exceed 30 parts of chlorine in 100,000 parts of flock. Several instances of very dirty flock were encountered, including one in which the inspector found filthy flock, containing 326 parts of chlorine per 100,000, being used in the upholstering of new furniture. Only 7 of the 14 samples procured for analysis complied with the very moderate standard of cleanliness which the chlorine limit represents. Milk adulteration continues to be common in this part of London, no less than 10·39 per cent. of milk samples being adulterated. It is unsatisfactory to note in this connexion that the samples procured by the borough inspectors on delivery to private houses showed an adulteration rate at least three times as heavy as that of the samples taken from public institutions, from retailers' premises, or at the railway stations. In one case a milk vendor, when the inspector asked for a sample of milk from a certain can containing about eight quarts of milk, deliberately upset the contents. Enough was, however, secured for analysis, and the so-called milk was ascertained to contain 57 per cent. of added water. A fraudulent practice which has given much trouble is that carried out by itinerant vendors of "butter," known as canvassers, who go from house to house soliciting orders and selling samples, their wares being, in fact, margarine or margarine with a very small admixture of butter. Dr. Caldwell Smith instituted in 1912 a useful series of observations on the presence of lead in ginger-beer sold on licensed premises as a result of the use of lead pipe between the barrel and the hand-pump on the counter. Of 13 formal samples of ginger-beer thus supplied 12 contained lead in amounts which varied from 0·5 to 9·8 grains per gallon. A prosecution under Section 3 of the Sale of Food and Drugs Act, 1875, failed on a technical ground; probably in like case proceedings under Section 6 of the same Act would have had better chance of success. The publicity given to the matter, however, should be the means of putting a stop to a practice which Dr. Caldwell Smith rightly asserts to be dangerous to the health of the public. We may conclude by a reference to the table showing the number of deaths from pulmonary tuberculosis year by year and the proportion of these which occur in public institutions. In 1912, out of 303 such deaths 86 (28·3 per cent.) occurred in Poor-law infirmaries and 43 (14·2 per cent.) in general or special hospitals. The percentage tends to increase in both classes of institution, and it is worth noting that now little more than half the cases of pulmonary tuberculosis in Wandsworth die at their homes.

Metropolitan Borough of Stoke Newington.—Dr. H. R. Kenwood, in his annual report for 1912, gives prominence to the work of official and voluntary health visitors in visiting infants shortly after birth. The borough health visitor lays stress on the futility of calling to give advice in the cases, which appear to be many, in which the mother is in a condition of considerable poverty. In such instances some practical assistance is absolutely necessary if mothers are to take advantage of the advice which the health visitor is sent to give and to which she is at present restricted. On the question of measles, Dr. Kenwood considers that, in view of the limited nature of the hospital accommodation at present available at the Metropolitan Asylums Board hospitals for cases of this disease, the additional advantage which compulsory notification would supply is not very great. Already a very large number of cases come to the knowledge of the local authority without compulsory notification through the education authority and in other ways. Handbills are distributed at the houses visited, and it is proposed to add to them a statement to the effect that a limited amount of hospital accommodation is available for the most necessitous cases, and to invite applications at the town hall. Similar considerations apply to whooping-cough. Dr. Kenwood, who is also public analyst of the borough, points out that the addition of boric acid to milk has not yet ceased, and cites the case of a young adult, aged 18, suffering from flatulent dyspepsia and associated conditions, whose ordinary supply of milk, sampled on three occasions at short intervals during July, was found to contain 5, 7, and 11 grains of boric acid per pint respectively. The milk-supply was changed with beneficial results. Such practices on the part of milk vendors can now be easily put a stop to by applying the powers conferred on local authorities by the Milk and Cream Regulations of the Local Government Board. Dr. Kenwood urges that the practice of colouring milk should definitely be made illegal. He finds that it is becoming more common year by year and serves to cloak the watering of milk and the abstraction of fat. A useful circular-letter on the prevention of infantile diarrhœa appended to the report states that it is desirable to boil well all milk given to infants and to use no raw milk during the summer months. It is added that "pasteurised and

sterilised milk is safer than raw milk, and can now be obtained as cheaply." For those for whom the circular is intended, however, we think it might be better to limit the advice to domestic boiling; the greater security of cheap milk represented as "pasteurised" or as "sterilised" cannot be regarded as in all cases fully assured.

Metropolitan Borough of Islington.—Mr. A. E. Harris's pamphlet on the health of Islington during the first quarter of the present year contains an interesting note by one of the borough meat inspectors on the presence of foot-and-mouth disease in frozen ox tongues arriving from Russia. In the course of examination of two such consignments of ox tongues at a canning factory 301 tongues were found to have peeled patches of the mucous membrane which appeared suspicious. Specimens of the second consignment were obtained which showed lesions identical with those of foot-and-mouth disease, the diagnosis being confirmed on reference to the Local Government Board, the Royal Veterinary College, and the Board of Agriculture. The tongues in question were surrendered and destroyed. Under an arrangement with the London County Council the borough council since the beginning of the year has undertaken the cleansing of verminous school children, and has carried this out in 253 cases. Mr. Harris is of opinion that this undertaking must prove a great boon to the school children of the borough, as many of them were in a most pitiable and neglected state. The clothing is thoroughly disinfected in a small steam disinfecting apparatus specially installed for the purpose, and Mr. Harris states that the vermin found in some of the garments is almost beyond credibility.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 96 English and Welsh towns, with populations exceeding 50,000 persons at the last Census, and whose aggregate population at the middle of this year is estimated at 17,852,766 persons, 8859 births and 3871 deaths were registered during the week ended Saturday, July 19th. The annual rate of mortality in these towns, which had been 11·3, 11·2, and 11·4 per 1000 in the three preceding weeks, fell to 11·3 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 13·5, against 13·3 per 1000 in London during the same period. Among the several towns the death-rates last week ranged from 1·9 in Devonport, 4·6 in Northampton, 4·8 in Eastbourne, 5·2 in Swansea, and 5·6 in Smethwick, to 16·4 in Middlesbrough, 17·5 in Gloucester, 17·9 in West Hartlepool, 18·8 in Bootle, and 19·6 in Stoke-on-Trent.

The 3871 deaths from all causes in the 96 towns were 49 fewer than the number in the previous week, and included 343 which were referred to the principal epidemic diseases, against 281 and 344 in the two preceding weeks. Of these 343 deaths, 149 resulted from infantile diarrhœal diseases, 68 from measles, 62 from whooping-cough, 35 from diphtheria, 20 from scarlet fever, and 9 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·0 per 1000, against 0·8 and 1·0 per 1000 in the two preceding weeks. The deaths of infants under two years of age attributed to diarrhœa and enteritis, which had increased from 90 to 155 in the four preceding weeks, slightly declined to 149 last week, and included 34 in London, 18 in Liverpool, 11 in Manchester, 10 in Birmingham, 8 in West Ham, and 5 each in Stoke-on-Trent, in Walsall, in Leeds, and in Sheffield. The deaths referred to measles, which had declined from 87 to 69 in the four preceding weeks, were 68 last week; of this number 17 occurred in Stoke-on-Trent, 16 in London, 5 in Liverpool, 5 in Manchester, and 4 in West Bromwich. The fatal cases of whooping-cough, which had been 68, 53, and 55 in the three preceding weeks, rose to 62 last week; 13 deaths were recorded in London, 4 each in Birmingham, Liverpool, Manchester, and Hull, and 3 each in Willesden, Leeds, and Sunderland. The deaths attributed to diphtheria, which had been 31, 24, and 34 in the three preceding weeks, were 35 last week, and included 6 in London, 3 in Tottenham, and 3 in Stoke-on-Trent. The deaths referred to scarlet fever, which had been 15, 13, and 17 in the three preceding weeks, further rose to 20 last week; 4 deaths were recorded in London, 3 in Sheffield, 2 in Birmingham, 2 in Manchester, and 2 in South Shields. The fatal cases of enteric fever numbered 9, against 6, 9, and 14 in the three preceding weeks, and included 2 in London.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had increased from 1418 to 1833 at the end of the five preceding weeks, further rose to 1978 on Saturday last; 357 new cases were admitted during the week, against 286, 314, and 315 in the three preceding weeks. These hospitals also contained on Saturday last 884 cases of diphtheria, 315 of measles, 283 of whooping-cough, and 43 of enteric fever, but not one of small-pox. The 901 deaths from all causes in London were 59 fewer than the number in the previous week, and corresponded to an annual death-rate of 10·4 per 1000. The deaths referred to diseases of the respiratory system, which had been 126, 106, and 137 in the three preceding weeks, declined to 115 last week, and were 2 fewer than the number in the corresponding week of last year.

Of the 3871 deaths from all causes in the 96 towns, 174 resulted from various forms of violence and 335 were the subject of coroners' inquests. The causes of 30, or 0·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Sheffield, Leeds, Bristol, Hull, Newcastle-on-Tyne, Nottingham, and in 60 other smaller towns. Of the 30 uncertified causes of death, 7 were recorded in Birmingham, 3 in Liverpool, 3 in Bootle, 3 in Gateshead, 2 in Rochdale, and 2 in South Shields.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns, with an aggregate population estimated at 2,259,600 persons at the middle of this year, 1177 births and 570 deaths were registered during the week ended Saturday, July 19th. The annual rate of mortality in these towns, which had been 14·9, 13·7, and 13·6 in the three preceding weeks, further declined to 13·2 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these Scotch towns averaged 16·3, against 13·5 per 1000 in the 96 large English towns. Among the several towns the death-rates last week ranged from 9·0 in Kilmarnock, 9·5 in Hamilton, and 9·8 in Clydebank, to 16·8 in Ayr, 17·6 in Falkirk, and 18·9 in Dundee.

The 570 deaths from all causes were 21 fewer than the number in the previous week, and included 61 which were referred to the principal epidemic diseases, against 89 and 71 in the two preceding weeks. Of these 61 deaths, 28 resulted from measles, 13 from infantile diarrhœal diseases, 11 from whooping-cough, 5 from diphtheria, and 4 from scarlet fever, but not one from enteric fever or from small-pox. These 61 deaths from the principal epidemic diseases corresponded to an annual death-rate of 1·4, against 1·0 per 1000 in the 96 large English towns. The deaths attributed to measles, which had been 35, 38, and 27 in the three preceding weeks, were 28 last week, and included 20 in Glasgow, 3 in Aberdeen, and 2 in Dundee. The deaths of infants (under 2 years of age) referred to diarrhœa and enteritis, which had been 12, 21, and 17 in the three preceding weeks, declined to 13 last week; of this number 4 were recorded in Glasgow, 4 in Dundee, and 3 in Motherwell. The fatal cases of whooping-cough, which had been 15, 20, and 16 in the three preceding weeks, further declined to 11 last week, and included 8 in Glasgow. The 5 deaths attributed to diphtheria, of which 3 occurred in Glasgow, were equal to the average in the five preceding weeks. Three of the 4 deaths from scarlet fever, and a fatal case of typhus were registered in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 78, 71, and 79 in the three preceding weeks, fell to 71 last week; 23 deaths resulted from different forms of violence, against 24 and 30 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,199,180 persons at the middle of

this year, 608 births and 349 deaths were registered during the week ended Saturday, July 19th. The annual rate of mortality in these towns, which had been 16·7, 16·4, and 15·5 in the three preceding weeks, further declined to 15·2 per 1000 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these Irish towns averaged 19·1 per 1000; in the 96 large English towns the corresponding rate did not exceed 13·5, while in the 16 Scotch towns it was equal to 16·3 per 1000. The annual death-rate last week was equal to 15·9 in Dublin (against 10·4 in London and 12·5 in Glasgow), 15·8 in Belfast, 13·6 in Cork, 14·0 in Londonderry, 14·9 in Limerick, and 24·7 in Waterford, while in the remaining 21 smaller towns the mean death-rate did not exceed 12·3 per 1000.

The 349 deaths from all causes were 7 fewer than the number in the previous week, and included 28 which were referred to the principal epidemic diseases, against 25 and 36 in the two preceding weeks. Of these 28 deaths, 16 resulted from infantile diarrhœal diseases, 4 from measles, 3 from scarlet fever, 3 from diphtheria, and 2 from whooping-cough, but not one from enteric fever or from small-pox. The mean annual death-rate from these diseases last week was equal to 1·3 per 1000; in the 96 large English towns the corresponding rate did not exceed 1·0, while in the 16 Scotch towns it averaged 1·4 per 1000. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had been 11, 9, and 15 in the three preceding weeks, were 16 last week, and included 11 in Dublin, 4 in Belfast, and 1 in Waterford. The 4 deaths referred to measles were slightly below the average in recent weeks, and comprised 2 in Londonderry and 2 in Waterford. The 3 fatal cases of scarlet fever and 2 of the 3 deaths from diphtheria were recorded in Belfast. The 2 deaths from whooping-cough were registered in Dublin and Bray respectively.

The deaths referred to diseases of the respiratory system, which had declined from 71 to 52 in the five preceding weeks, slightly rose to 56 in the week under notice. Of the 349 deaths from all causes, 100, or 29 per cent., occurred in public institutions, and 5 resulted from different forms of violence. The causes of 13, or 3·7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 large English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned surgeons have been promoted to the rank of Staff-Surgeon in His Majesty's Fleet:—Walter Goldsworthy Edwards (dated June 9th, 1910), Robert Francis MacMahon (dated Nov. 21st, 1910), Walter Graham Moore-Anderson (dated Nov. 23rd, 1911), Edward Michael William Hearn, Samuel Henry Vickery, and Maurice Willoughby Haydon (dated Nov. 21st, 1912).

The following appointment has been notified:—Staff-Surgeon: F. C. Robinson to the *Adventure*, temporary.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel James Thomson, Royal Army Medical Corps, to be Officer in charge of the Royal Army Medical Corps Records (dated July 1st, 1913).

Colonel J. M. Irwin, Deputy Director of Medical Services to the South China Command, has arrived home on leave of absence.

Lieutenant-Colonel G. H. Barefoot, on arrival home from Ranikhet Cantonment, has been appointed to the London District for duty at Millbank. Lieutenant-Colonel R. Caldwell has arrived home for duty from the Military Hospital at Pretoria, tour expired. Lieutenant-Colonel T. G. Lavie has been appointed to command No. 30th Company of the Royal Army Medical Corps at Cottonera, Malta, in succession to Lieutenant-Colonel H. M. Sloggett, transferred to the Home Establishment. Lieutenant-Colonel H. Carr, senior medical officer at Ambala Cantonment, has been appointed to officiate as Assistant Director of Medical Services to the Sirhind and Jullundur Brigades.

Major J. H. Barbour has been transferred from the Military Hospital at Kamptee to Ferozepore Cantonment. Major J. B. Clarke, specialist in operative surgery at the Military Hospital, Colchester, has been placed in charge of the District Mobilisation Equipment. Major S. O. Hall has been transferred from the Military Hospital at Karachi Cantonment to Hyderabad, Sind, and appointed Senior Medical Officer. Major E. Brodribb has been appointed to hold charge of the Valetta Military Hospital at Malta, in succession to Major H. S. Thurston. An exchange has been approved by the Director-General, on the roster for service abroad, between Major G. B. Crisp, serving at recruiting duties in the London District, and Major W. M. B. Sparkes, serving at Dublin; the former officer will now proceed abroad instead of the latter. Major L. Wood has joined for duty at Quetta. Major F. J. Palmer has arrived home on leave of absence from Ambala Cantonment. Major T. F. Ritchie has been appointed to the London District. Major J. E. Brogden has been appointed to hold charge of the Detachment and Military Hospital at Imtarfa, Malta. Major A. W. N. Bowen has been granted an extension of leave of absence home from India, with permission to revert to the Home Establishment at its expiration. Major J. P. Silver has been transferred from the Military Hospital at Cork to Kilworth. Major M. H. Babington has embarked on H.M.S. *The Black Prince* from Malta for special service in Scutari. Major E. G. Ffrench has been appointed Specialist in Venereal Diseases and Dermatology to the Ninth (Secunderabad) Division of the Southern Army in India. Major E. E. Ellery has arrived home on leave of absence from the Military Hospital at Cairo. Major F. P. Hewitt has been granted an extension of leave of absence home from India to Nov. 6th next on medical certificate.

Captain N. E. J. Harding has arrived home for duty from the Sierra Leone Protectorate, tour expired. Captain C. G. Sherlock has been transferred from the Military Hospital at Lahore to Dalhousie Cantonment. The following Captains have been selected to attend the promotion course to the rank of Major at the Royal Army Medical College: J. C. Hart, C. Kelly, C. McQueen, A. W. Bevis, G. H. Stack, and R. H. Nolan. Captain T. McC. Phillips has arrived home on leave of absence from the Military Hospital at Fyzabad Cantonment. Captain A. W. Byrne has been transferred from the Military Hospital at Jullundur to Dalhousie Cantonment. Captain F. H. M. Chapman has been appointed Staff-Surgeon at Meerut Cantonment. Captain J. A. Bennett has taken up duty as Specialist in Electrical Science at Poona Cantonment. Captain G. S. Parkinson has arrived home for duty from the Military Hospital at Pretoria, tour expired. Captain W. H. S. Burney has been transferred from the Military Hospital at Attock to Khanspur Cantonment, Murree Hills District. Captain J. E. M. Boyd has been appointed Specialist in the Prevention of Disease, and placed in charge of the Bacteriological Laboratory at Brigade Headquarters, Ferozepore Cantonment. Captain K. Comyn has joined at Gibraltar. Captain C. M. Rigby has arrived home on leave of absence from the Military Hospital at Bombay. Captain G. P. A. Bracken has been granted an extension of leave of absence home from India to Sept. 30th next, with permission to revert to the Home Establishment on expiration thereof. An exchange of duty in India has been approved between Captain E. C. Whitehead to the Eighth (Lucknow) Division, vice Captain M. P. Leahy to the Home Establishment. Captain F. A. H. Clarke has been transferred from the Military Hospital at Multan to Darjeeling Cantonment. Captain A. W. A. Irwin has been appointed to the Cork District. Captain A. M. Pollard has arrived home for duty from the Military Hospital at Bloemfontein, tour expired. Captain R. J. Franklin has taken up duty at the Military Hospital, Solon, on transfer from Lahore. Captain C. E. L. Harding has been permitted to extend his tour of service in India by one year. Captain F. W. W. Dawson has been transferred to Kasauli from Ambala Cantonment. Captain W. B. Rennie has been granted six months' leave of absence home from India. Captain F. C. Lambert has been appointed to hold medical charge at Brownslade Camp, on transfer from Pembroke Dock. Captain E. M. O'Neill has joined at Youghal. Captain H. T. Wilson has been transferred from the Military Hospital at Maidstone to Chatham. Captain A. C. Amy has joined at Agra.

Lieutenant J. K. Gaunt has embarked on H.M.S. *The Black Prince* from Malta for special service at Scutari. Lieutenant

W. T. Graham has been transferred from the Third (Lahore) Division to the Eighth (Lucknow) Division. Lieutenant D. Reynolds, on arrival in India for a tour of duty, has been appointed to the Military Hospital at Rawal Pindi Cantonment to undergo a course of instruction in Indian sanitation. Lieutenant H. J. S. Shields has joined at Windsor. Lieutenant T. J. Hallinan has been transferred from the Eighth (Lucknow) Division to the Third (Lahore) Division. Lieutenant E. G. S. Cane has taken up duty as Specialist in the Prevention of Disease and in charge of the Bateriological Research Laboratory at Brigade Headquarters, Colaba, Bombay. Lieutenant J. L. Huggan has taken up duty in the London District. Lieutenant H. F. Panton has been appointed to hold Medical Charge at Fargo Camp, Salisbury Plain, on transfer from the Military Hospital at Tidworth. Lieutenant C. M. Finney has been transferred from the Third (Lahore) Division to the Second (Rawal Pindi) Division. Lieutenant W. Bisset has taken up duty at the Military Hospital, Dagshai, on transfer from Ambala Cantonment. Lieutenant S. P. Sykes has been transferred from the Royal Herbert Hospital at Woolwich to Kingston-on-Thames. Lieutenant A. G. MacIlwaine has left Deepcut for a tour of duty in India, and on arrival will be appointed to the Fourth (Quetta) Division. Lieutenant R. E. Porter has been transferred from Cork to Waterford.

INDIAN MEDICAL SERVICE.

The King has approved of the promotion of Lieutenant-Colonel Bruce Gordon Seton to Brevet Colonel (dated June 30th, 1913).

Lieutenant-Colonel F. C. Pereira has arrived home on leave of absence from India. Lieutenant-Colonel E. V. Hugo, Professor of Surgery at the Government Medical College, Lahore, has been granted one year's furlough home from India. Lieutenant-Colonel C. H. James has been appointed Civil Surgeon at Simla, in succession to Lieutenant-Colonel C. Duer, whose tenure of the appointment has expired. Lieutenant-Colonel W. Ronaldson Clark has been appointed to Jullundur as Civil Surgeon. Lieutenant-Colonel W. G. Pridmore, ophthalmic surgeon to the General Hospital at Rangoon, has been granted two years' leave of absence combined with furlough home from India.

Major D. McCay has been appointed to officiate as Professor of Materia Medica at the Government Medical College, Calcutta, during the absence on leave of Lieutenant-Colonel B. H. Deare. Major M. Mackelvie has been granted five months' extension of leave of absence. The services of Major H. M. Mackenzie have been placed at the disposal of the Home Department. Major H. A. Williams, D.S.O., resident medical officer at the General Hospital, Rangoon, has been transferred. Major A. G. McKendrick has been granted two years' leave of absence combined with furlough home from India. Major V. H. Roberts has taken over medical charge of the Chindwara District. Major J. W. Megaw, on return to duty from leave of absence, has been appointed Civil Surgeon at Monghyr.

Captain W. P. G. Williams has arrived home on leave of absence from India. The services of Captain T. C. McCombie Young have been placed permanently at the disposal of the Government of Assam for employment in the Sanitary Department. Captain D. P. Goil, civil surgeon at Mymensingh, has been allowed privilege leave of absence combined with study leave and furlough for two years and eight months. Captain A. K. Munro has been appointed to the substantive Medical Charge of the 128th Regiment of Pioneers, in succession to Captain W. J. Frazer. Captain R. Markham Carter has been appointed by H.E. the Governor of Bombay to officiate as Professor of Pathology at the Grant Medical College, Bombay, in succession to Major E. F. G. Tucker. Captain A. J. Symes has arrived home on leave of absence from India. The services of Captain F. W. Sumner have been placed permanently at the disposal of the Government of the United Provinces of Agra and Oudh. Captain H. Stott has taken up duty as Surgeon to H.E. the Governor of Madras Presidency. Captain A. E. Grisewood, chief plague officer in the Central Provinces, has been granted eight months' leave of absence. The services of Captain Ba Ket, an officiating civil surgeon in Burma, have been replaced at the disposal of the Home Department of the Government of India.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned to be Lieutenants (on probation):—Cadet George Harris Haines, from the University of London Contingent, Officers Training Corps (dated June 17th, 1913). Cadet Sergeant Howell Gwynne Jones, from the University of London Contingent, Officers Training Corps (dated June 20th, 1913). Cadet Lance-Corporal John Francis William Meenan, from the Belfast University Contingent, Officers Training Corps (dated June 27th, 1913).

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st East Anglian Field Ambulance, Royal Army Medical Corps: Lieutenant-Colonel Francis A. Brooks resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated July 19th, 1913).

2nd London (City of London) Field Ambulance, Royal Army Medical Corps: Leonard Austin Harwood to be Lieutenant (dated June 2nd, 1913). Hubert Pinto-Leite to be Lieutenant (dated June 16th, 1913).

Eastern Mounted Brigade Field Ambulance, Royal Army Medical Corps: Captain Meredith S. Doubble resigns his commission (dated July 23rd, 1913).

Supernumerary for Service with the Officers Training Corps: Harold Kinder Griffith (late Lieutenant, 9th (County of London) Battalion, The London Regiment (Queen Victoria's Rifles)) to be Lieutenant, for service with the Medical Unit of the University of London Contingent, Senior Division, Officers Training Corps (dated July 23rd, 1913).

Attached to Units other than Medical Units.—Lieutenant Hugh Davies resigns his commission (dated July 19th, 1913).

For attachment to Units other than Medical Units.—James George Hayes to be Lieutenant (dated May 30th, 1913). John Wotherspoon to be Lieutenant (dated June 17th, 1913).

Correspondence.

"Audi alteram partem."

THE COMING AMENDMENT OF THE NATIONAL INSURANCE ACT, 1911.

To the Editor of THE LANCET.

SIR,—It is acknowledged on all sides that the claims for sickness benefit under the above Act are very largely exceeding the number which were expected and estimated for, and that this is causing very great anxiety to the managers of both Friendly and Approved Societies. Various suggestions have been made for the curtailment of these claims, especially one that there should be appointed four "medical advisers" for the whole of London, whose duty it would be to visit assured persons suspected of malingering, and after consultation with the panel doctor to report to the Local Committee as to whether the claimant is really suffering from ill-health and whether the certificate of the panel doctor is correct, and for this difficult and responsible work a fee per visit of 7*s.* 6*d.* has been suggested. This suggestion is, as it stands, quite impracticable, as no medical man of standing and authority would agree to make visits and hold consultations anywhere in a quarter of London at a fee of 7*s.* 6*d.*, and it is also certain that panel doctors could not be expected to hold consultations with these medical advisers without a consultation fee. Again, the report of the medical adviser would have no authority, as each case would after all be decided by the Local Committee, chiefly consisting of lay members.

I shall be much obliged if by your courtesy I may be allowed to put the following before your readers, as the whole question is of the greatest importance to the profession.

1. There is, no doubt, an immense amount of malingering, and it is freely alleged that in many cases where an assured person gets out of work temporarily there is a great inducement to attempt to obtain the 10*s.* a week sickness benefit,

and that therefore a story is told to the panel doctor for the purpose of obtaining a certificate.

2. It is very difficult for a panel doctor to decline to attend a person complaining of ill-health and run the risk of being exposed in the local press as a careless, heartless, or ignorant man.

3. Every medical man whether in consulting or general practice is obliged to rely largely on the statements made to him by his patients, and even in cases of suspicion it is impossible for an attending medical man to inform a patient that there is nothing the matter with him, and that he is obsessed with an idea that he is suffering or else that his statements are deliberately untrue.

4. Under the Workmen's Compensation Act, 1906, there has occurred a judgment of the Court of Appeal which is of great importance even outside the Compensation Act; it is that a workman need not submit himself to an operation, however much it is advised by an employer's or insurance company's medical examiner, unless it is approved by the workman's usual medical attendant. This decision has apparently been arrived at on the ground that a medical man in constant attendance on a patient must know more of his constitution than a medical examiner, however specially qualified, who has only seen the case once or twice. Although many will not wholly agree with this contention, yet the very fact that the decision stands will prevent the opinion of a panel doctor being disagreed with except on exceptional grounds.

5. Although there are many malingerers, there is another very potent cause for the excessive number of claims which are being made on Friendly and Approved Societies. In its inception the Act was largely based on the statistics of Friendly Societies, and their average of sickness claims entirely resulted from the fact that their members were healthy lives, having been carefully examined by the club doctors before they were admitted to membership. The intention of the Act was clearly that the societies should continue to select healthy lives, admitting persons to membership after a medical examination, but this has not been done, for in the strenuous competition which has occurred between Friendly and Approved Societies every safeguard has been discarded and members have been accepted without medical examination.

6. The result of the above is that with a large amount of malingering there are also large numbers of persons in genuine ill-health, and practically unable to work, who have been accepted by the societies, and of whom the societies would now gladly get rid.

7. The question is of the greatest importance to the taxpayers of the country, who will have to bear the financial burdens of the Act, to Friendly and Approved Societies, and last, but not least, to all assured persons who may have to claim under the Act; it is, therefore, essential that although the honest poor should have their rights and that they should be assured of the benefits for which they have paid, on the other hand, it is equally essential that the State and Friendly and Approved Societies should be protected from fraudulent claims.

In view of the whole of the above I do not think that anyone conversant with the subject will dispute that it is absolutely necessary that thoroughly experienced and independent medical referees should be appointed. 1. That they should be of a position and standing which would render them acceptable by panel doctors, and that their decisions should be "final and conclusive," as are the decisions of the medical referees under the Workmen's Compensation Act. 2. That an arrangement should be made for fees to be paid to panel doctors attending consultations with medical referees and according them full information as to the history of the case. 3. That as it would be of advantage that panel doctors should be able to call for the opinion of a medical referee whenever necessary, and that Local Committees should be able to have their advice without being trammelled by the question of expense, the fees of medical referees should be fixed by the Commissioners, with the consent of the Treasury, and paid out of moneys provided by Parliament in the same way as are the fees of medical referees under the Workmen's Compensation Act. These latter medical referees hold their appointments at the will of the Secretary of State, and the Home Office is in close touch with the county court judges who are conversant with the work of individual medical referees; machinery could, no doubt, be arranged so that the Secretary of State or the Insurance Commission should be in close touch with the work of the medical referees and able to exercise the necessary supervision.

I am, Sir, yours faithfully,

Fellows-road, N.W., July 17th, 1913. ALBERT BENTHALL.

VOICE TRAINING.

To the Editor of THE LANCET.

SIR,—An influentially signed memorial was presented to the University of London some time ago requesting the University to appoint a committee to investigate certain difficult matters in regard to voice and speech training. On Jan. 15th, 1910, a conference was held at the University of London, at which representatives of the following Universities were present:—Oxford, Cambridge, Durham, London, Wales, Birmingham, Liverpool, Leeds, and Sheffield, in addition to a certain number of the signatories to the original memorial. As a result of the conference it was decided to appoint a committee of investigation to inquire into the present knowledge concerning voice and speech training in order to ascertain the scientific basis upon which speech training should be conducted and what agreement exists in regard to first principles.

Owing to difficulties into which I need not enter at present only a portion of the work contemplated has been carried out. The committee was not constituted as a whole, but the following persons kindly consented to act in the first instance as a subcommittee to investigate normal healthy breathing in relation to speech:—Mr. H. H. Hulbert, M.A., M.R.C.S.; Dr. Arthur Keith, F.R.S., Hunterian Professor at the Royal College of Surgeons; Dr. William Pasteur, of the Middlesex Hospital; Dr. C. S. Sherrington, F.R.S., Professor of Physiology in the University of Liverpool; Dr. Peter Thompson, Professor of Anatomy in the University of Birmingham. With the consent of Dr. Pasteur, who has acted as chairman of the subcommittee, I enclose for publication their preliminary report, which I think is likely to be of interest to medical men, teachers, and other persons.

I am, Sir, yours faithfully,

HENRY A. MIERS, Principal.

South Kensington, S.W., July 18th, 1913.

[ENCLOSURE.]

VOICE TRAINING CONFERENCE.

REPORT OF SUBCOMMITTEE No. 1.

Reference.—To Investigate Normal Healthy Breathing in Relation to Speech.

In view of the unforeseen delays encountered in carrying out the investigations referred to this subcommittee by the conference, it has been decided to present the subjoined preliminary report in the hope that it may prove useful to other subcommittees in the course of their inquiries.

Whilst recognising that the manner of breathing of healthy individuals may vary within certain limits, the subcommittee are of opinion that some general principles can be laid down with regard to the modifications of breathing necessary for action (speech, singing, and exercise). They are further of opinion that their conclusions can most conveniently be presented in the form of general statements, which they believe to be of fundamental importance.

1. The law of "reciprocal innervation" governs all muscular contraction.[1]

2. Ideal breathing (for voice) is carried out by those muscular movements which produce efficient expansion of the chest, under perfect control (provided always those muscles are kept out of action which interfere with the action of respiration; e.g., shoulder and neck muscles).

3. Such breathing should bring every part of the lung into activity.

4. Beyond a certain point every additional gain in expansion of the chest is at the expense of control, and is liable to lead to permanent deterioration of the muscles and injury to the lung.

5. Ideal breathing should secure a maximum of mobility of the chest and abdominal walls, such mobility being under perfect control.

It will be advantageous to consider somewhat more fully in what manner, and to what extent, the normal respiratory movements are modified by the introduction of speech. In health, respiration, properly carried out, brings the whole lung into activity, and in ordinary quiet breathing this process is (largely) automatic. Breathing for voice introduces a voluntary or quasi-voluntary factor—an addition to the purely respiratory function. By means which are under the control of the will the capacity of the chest can be so enlarged that varying amounts of air, for varying requirements, can be drawn into it over and above the amount required for the aeration of the blood. This bringing of the more or less automatic muscular apparatus of respiration under the direct influence of volition is what is meant by control; and without it sustained coördinated speech is impossible.

Breathing for voice, as contrasted with the breathing of repose which is automatic and mainly diaphragmatic, presents certain new factors.

[1] See explanatory note by Professor Sherrington on next page.

Of these the employment of the diaphragm as a voluntary muscle is probably the most important. When the diaphragm acts in this way, in addition to its descent which is the more obvious result, the lower ribs are elevated, increasing the transverse diameter of the body at this level, this providing additional space at that part of the abdominal cavity for the viscera displaced by the descent of the diaphragm. Simultaneously the muscles of the abdominal wall come under the sphere of influence. In the breathing of repose the tonus of the broad muscles of the abdomen is such as just to admit of the necessary bulging forward which is determined by the downward displacement of the abdominal contents by the contracting diaphragm. In breathing for voice this tonus is increased, as can readily be appreciated by palpation. The effect of this hardening of the abdominal wall checks the outward bulging (which is no longer necessary), and by steadying the lower part of the chest takes a share in the control of expiration.

Regarding the other factors concerned in the control of expiration, the subcommittee are of opinion that further investigations must be undertaken before any authoritative pronouncement can be made.

H. H. HULBERT, ARTHUR KEITH, W. PASTEUR,
April 8th, 1913. C. S. SHERRINGTON, PETER THOMPSON.

Note by Professor Sherrington on "Reciprocal Innervation."

The inspiratory and expiratory muscles are mutually antagonistic. There is reason to believe that like other antagonistic muscle-groups they obey in their relations the rule of reciprocal innervation—that is, when the motor centres of the inspiratory muscles are discharged (activated), those of the expiratory are inhibited, and conversely.

It has been shown that in the normal breathing of the rabbit the electrical current (action-current) of the diaphragm ceases altogether during the expiratory phase, but that in the abnormal breathing of the animal under chloral the action-current of the muscle (diaphragm) persists, even throughout each expiration, although in diminished intensity. The diaphragm and its motor centre are in the latter case never given a full repose at all, and fatigue of respiration ensues.

POOR-LAW INFIRMARIES AND THE TREATMENT OF SYPHILIS.

To the Editor of THE LANCET.

SIR,—It is interesting to learn from the letter of Mr. A. Lionel Baly in THE LANCET of July 19th that in the Lambeth Poor-law infirmary cases of primary and secondary syphilis are treated in special wards, and that every case which is considered suitable is given one or more doses of salvarsan. But perhaps I may be allowed to express some disappointment that he did not honour my Plea for the Appointment of a Royal Commission on Venereal Disease with a less cursory reading. I did not suggest that in Poor-law infirmaries "no use whatever is made of salvarsan." The words quoted were applied by me not to Poor-law infirmaries generally nor even to metropolitan Poor-law infirmaries generally, but to the three institutions at which inquiries had been made on my behalf. I expressly said that I had no detailed information about the metropolitan Poor-law infirmaries, and all that I suggested as to them was that their facilities for the treatment of syphilis according to modern methods were probably even less than those at the command of the general hospitals.—I am, Sir, yours faithfully,

July 22nd, 1913. MALCOLM MORRIS.

SURGICAL TUBERCULOSIS IN CHILDREN.

To the Editor of THE LANCET.

SIR,—With much of Mr. A. H. Tubby's review of the methods and results of the treatment of surgical tuberculosis the majority of orthopædic surgeons will agree. In seeking, however, to make good his case in favour of extra-urban *v.* urban treatment he has compared the results of conservative treatment in the country with operative treatment in the town. Thus, he has contrasted results obtained by conservative treatment at the Sevenoaks Hip Hospital with results obtained by operative treatment in four London children's hospitals, and presented them to us as if they were really comparable. An opponent of his scheme would be perfectly justified in arguing that it was the conservative treatment which produced the better results, and not the climatic treatment; and he would be enormously strengthened in his argument by Sir Anthony Bowlby's statistics of the Alexandra Hip Hospital, published in 1908.[1] In 12 years there passed under Sir Anthony Bowlby's care 900 children with hip disease; they were treated by conservative methods; 867 were cured and 33 died, a mortality of 3·7 per cent. The hospital lies in the heart of London; and 266 of the 900 were treated in their own homes, and were never even in-patients.

During the last three years I have been working under Mr. T. H. Openshaw in the orthopædic department of the London Hospital, and I *know* that the very large majority of cases of surgical tuberculosis respond readily to efficient conservative treatment regardless of the east-end climate. Though perfectly aware of the value of extra-urban treatment in certain cases, may I venture to suggest that what is really wanted is increased hospital accommodation in London for these cases, where they can remain in-patients as long as is required, and where they can receive treatment on rigid conservative principles?

I am, Sir, yours faithfully,
Harley-street, W., July 21st, 1913. PAUL B. ROTH.

[1] Brit. Med. Jour., June 20th, 1908; THE LANCET, March 7th, 1908.

SUPRAPUBIC CYSTOTOMY.

To the Editor of THE LANCET.

SIR,—In his interesting and instructive paper published in THE LANCET of July 19th Professor F. C. Madden has drawn attention to a subject which has interested me for some time past, and which is of great importance—namely, the relation of the peritoneum to the dilated bladder.

Professor Madden rightly lays stress upon complete exposure of the parts in the operation of suprapubic cystotomy. It is stated in the text-books of anatomy and surgery that when the bladder is dilated the peritoneum is stripped off the front wall of the bladder. This is not at all an accurate statement. From my experience of surgical operations, backed up by anatomical investigation, I am in a position to make the following statements. When the bladder is dilated, so that its upper end lies well above the pubes, there is a narrow triangular area of bladder about ½ in. broad and 1 in. long, uncovered by peritoneum, situated on its anterior surface, and just above the pubes. This is produced by the ascent of the urachus carrying with it a fold of peritoneum. On either side of this narrow triangular area there is the general peritoneal cavity extending downwards to below the level of the pubes.

In the operation for suprapubic puncture of the bladder a very slight deviation from the point indicated in the text-books will lead to the point of the trocar passing through the general peritoneal cavity on its way to the bladder, and I believe that general peritonitis has been caused by suprapubic puncture, and has been overlooked owing to the state of the patient, death being ascribed to the urinary condition, for which the suprapubic puncture was performed. If, on the other hand, the bladder is exposed in an operation, I am sure that it is necessary to push the peritoneum aside laterally, as well as upwards, in order to avoid cutting into the peritoneal cavity.

Finally, owing to lack of appreciation of the anatomical relations of the peritoneum to the dilated bladder, many surgeons teach that there is an area of dulness in front of the bladder. This may be so in a certain number of cases, but certainly not in the majority, as the intestines descend in front of the full bladder.

For this reason palpation of the distended bladder is of far greater clinical importance than percussion over the bladder area. Bearing in mind these anatomical relations, I am accustomed to teach that suprapubic drainage of the full bladder is a safer procedure than suprapubic puncture.

I am, Sir, yours faithfully,
RALPH THOMPSON,
Surgeon in charge of the Genito-Urinary Department, Guy's Hospital.
Wimpole-street, W., July 22nd, 1913.

THE AUTHORSHIP OF THE LOCKER-LAMPSON AMENDMENT.

To the Editor of THE LANCET.

SIR,—I beg you will forgive my troubling you, but a mistake has arisen and I have been blamed by many doctors for an amendment to the National Insurance Act which will transfer the administration of medical benefits to Approved Societies. May I say that this amendment is not mine, is not down in my name, and has never had my knowledge or approval. It is proposed by my brother, Mr. Godfrey Locker-Lampson, with whom I have as yet had no opportunity of discussion.

Having received no less than 18 letters to-day alone from doctors upon the subject, I shall be very grateful if you

would publish this contradiction. The mistake has arisen owing to the fact that I am conducting a "Fighting Fund" and appealing for help, and politicians interested in damaging this "Fighting Fund" have tried to suggest that I was opposed to the interests of the medical profession.

May I say that no Member of the House of Commons is more entirely determined to do his best to secure fair play for the doctors than myself, and may I add that one of the objects of the "Fighting Fund" is to see justice done to every class and trade regardless of its voting power, and in particular to support at this juncture the great medical profession upon which our lives and well-being so largely depend.

I am, Sir, yours faithfully,

OLIVER LOCKER-LAMPSON.

House of Commons, July 22nd, 1913.

*** We know that the error to which Mr. Locker-Lampson alludes is widespread, and have ourselves corrected it in several directions.—ED. L.

THE LADIES' PLATE AT HENLEY REGATTA.

To the Editor of THE LANCET.

SIR,—The letter of Mr. Shepherd Boyd in THE LANCET of July 19th raises an important question. I was at Henley this year when four public schools rowed. One crew I saw immediately after a losing race, but I did not see anything amiss with the boys. I also saw at different times during the afternoon, after they had rowed, several of the boys of the other crews. There was nothing to indicate by their appearance or manner that they had done anything harmful. These observations confirmed the opinion I formed in 1912, after seeing three schoolboy crews row.

Is there any evidence to show that a sound, healthy, athletic boy, properly trained, has done anything which is injurious to himself by rowing at Henley? Public schools have now taken part in these races for so many years that there ought not to be any difficulty in pointing to such cases, if they exist.

As I believe the public schools will still continue to send crews to Henley, it would be of great public service if you would invite rowing men with experience as coaches, as well as medical men who have had special opportunities of gaining knowledge of this branch of athletics, to tell us what they considered to be the best course of training to properly prepare boys for these races.

I am, Sir, yours faithfully,

Putney, July 20th, 1913. T. A. I. HOWELL.

THE TREATMENT OF PULMONARY TUBERCULOSIS: ADMINISTRATIVE QUESTIONS.

To the Editor of THE LANCET.

SIR,—Surely the time has come for dropping the foolish anomaly of making a distinction, in separate establishments for administrative purposes, between early and advanced cases of pulmonary tuberculosis. I see the President of the Society of Medical Officers of Health, Professor E. W. Hope, is strongly of this opinion. There is no substantial reason, other than the sentimental notion of being able to advertise a large ratio of cures, for the present grievous distinction. For it *is* a grievous distinction, as far as the afflicted patient is concerned, to be segregated in a special asylum for hopeless cases of disease.

Further, why appoint special tuberculosis officers to supervise the work of the medical practitioner? If there be one ailment more than another the ordinary doctor is capable of dealing with, it is surely tuberculosis. It is to the private personal medical attendant that the public must look for the earliest detection of the disease. Without his help the tuberculosis officer is practically helpless. All that is really wanted is the provision of a public institution where a report can be got as to the presence or absence of the tubercle bacillus in a particular portion of sputum. If the evidence as a whole is sufficient, the attendant notifies; if it be not, he does not. Clearly the decision rests with him, and no official can interfere until the step is taken of formal notification.

There is no good in blinking the fact that before notifying his patient to be classed along with other lepers many considerations have to come in besides the mere threatening of a tuberculous attack, which the evidence of morbid anatomy shows may fall upon the otherwise healthiest individual at any moment, and by-and-by subside as quickly as it came.

I am, Sir, yours faithfully,

A PRACTITIONER OF OVER FIFTY YEARS' STANDING.

July 16th, 1913.

THE CANADIAN MEDICAL ASSOCIATION:

FORTY-SIXTH ANNUAL MEETING IN LONDON, ONTARIO.

(FROM OUR OWN CORRESPONDENT.)

(*Concluded from p. 179.*)

THE second general meeting was held on June 25th, at which Dr. H. A. MACCALLUM (London), the President, delivered the

Presidential Address.

Dr. MACCALLUM urged a more active interest on the part of the profession in Canada in the work of the Association. The Association was doing away with provincialism, and had inaugurated reforms of inestimable benefit both to the profession and to the public. With every Canadian practitioner a member, even greater things could be attained. The necessity for funds to rescue the Association from exploitation by the commercial enterprise of certain manufacturing druggists was emphasised. The chemical industry of Germany was carefully organised, and it was difficult to know what to accept and what to reject. Trained and scientific censors were needed to advise and assist in promoting legislation against nostrums. The promise of the Prime Minister of the Dominion, the Hon. R. L. Borden, that a Portfolio of Public Health would be created in the near future, he said, had given unbounded satisfaction to the profession. Without it a pure food law and Federal control of vaccines, serums, and drugs were impossible. The work of the Carnegie Foundation was praised, but the difficulty so common in Germany was encountered, that medical men were scientists first and practitioners afterwards—a reversion of the natural order of things. The modern medical student was overburdened with scientific subjects and laboratory work and insufficiently grounded in the fundamental principles of medicine and surgery, a mistake whereby the general practitioner suffered. The larger percentage of medical students now graduating trended towards surgical practice, and there was a grave danger that the medical practice of medicine would be thrust into the background. This was not in the best interests of the profession or of the public, and the nostrum habit was a natural consequence. Dr. MacCallum considered British methods of medical education superior to German, for they trained the student by practical work to become a practitioner, not a theorist. He advocated the annual medical examination of every adult. Insurance companies had adopted the plan of examining their clients annually, and it would be a wise policy for all men and women. The institution of higher degrees and qualifications in medicine and surgery in the United States and Canada, Dr. MacCallum thought, would be advantageous to the profession. A low fee prevailed in many parts of the Dominion, and he hoped that a higher standard would soon prevail. More publicity, he thought, should be given to the achievements of medical science. In certain lines the profession had pursued this course with much success; as regarded vaccination against small-pox, for instance, and the anti-tuberculosis crusade. The adoption of similar methods in regard to vaccination against typhoid, and with reference to cancer, venereal, and other diseases, would doubtless be followed by equally good results. Finally, Dr. MacCallum was most emphatic in his conviction that the medical profession should not become a branch of the Civil Service.

The Address in Medicine.

Dr. LEWELLYS F. BARKER, Professor of Medicine at Johns

Hopkins University, Baltimore; delivered the address in medicine, which was a lecture, illustrated on the screen, concerning the nerve-supply of the internal organs of secretion and of the smooth muscles. I was unable to take any notes as the lights in the hall were turned out, but Dr. Barker promised publication in the *Journal of the Canadian Medical Association* of a written address on the subject.

Report on the Friedmann Cure.

The report of the committee of five appointed about three months ago by the Canadian Association for the Prevention of Tuberculosis to investigate the Friedmann remedy was read. The committee had studied the 161 cases inoculated by Dr. Friedmann in Montreal, Ottawa, Toronto, and London, with the aid of those physicians who had had the cases treated in their respective cities under their observation. The report of the committee, which was read by Dr. George D. Porter (Toronto) stated that as a result of the committee's observations from March 11th to the present time it seemed justifiable to conclude: 1. That the inoculations have neither constantly nor frequently been followed by marked change in the clinical course of the disease. 2. That the cure, or progress towards cure, claimed by Dr. Friedmann for the treatment has neither constantly nor frequently taken place in the time during which these cases have been under observation. 3. That the results have been disappointing, that Dr. Friedmann's claims for his remedy have not been proved, and that nothing has been found to justify any confidence in it. The report was signed by Professor J. George Adami, Professor J. J. Mackenzie, Dr. A. H. Caulfield, Dr. E. S. Harding, Dr. John W. S. McCullough, Dr. W. G. Ross, Dr. J. H. Elliott, and Dr. George D. Porter. Dr. Charles H. Hodgetts (Ottawa), a member of the committee, refused to sign on the ground, it was stated, that Dr. Friedmann not having kept his promise to divulge to the committee the exact composition of his remedy, the investigation was worthless and any report must be equally so.

Address on Mental Hygiene.

Dr. LEWELLYS F. BARKER gave an address on Mental Hygiene, which meant making men think better, act better, and become better. The imbecile, the criminal, the prostitute, and the insane were so because they had to be; their minds worked in that direction. The majority had been born with a bad brain and acted as their brain directed, while others, though born with a good brain, acted wrongly or criminally because so influenced. The advocates of eugenics believed largely in heredity, and urged the bringing into the world of children equipped with good brains. A second school believed environment to play the greater part in the development and expression of brain power, and devoted their attention to it. Both schools were of equal importance, and there should be no quarrel between them. Dr. Barker emphasised the benefit of institutional training for the mentally unfit, and urged that psychiatric clinics should be held frequently and that school teachers should be taught to recognise abnormal children and to segregate them or have them placed in institutions. A campaign for the promotion of mental hygiene in Canada similar to that in the United States would be equally successful.

Scientific Proceedings.

A symposium on Diseases of the Stomach was introduced on June 26th by Dr. ALEXANDER MCPHEDRAN (Toronto), and one on Diseases of the Thyroid by Dr. A. J. OCHSNER (Chicago.)

On June 27th Dr. FRANK BILLINGS (Chicago) gave a clinical lecture in the morning, in the course of which he attacked the methods of handling vaccine in the United States. He said that drug firms manufactured vaccines for nearly every known disease, and even combined cultures of various kinds to make a birdshot vaccine. Dr. Billings believed in vaccines to a great extent, but the manufactured vaccines were often entirely unsuited for their purpose and likely to have serious effects on the patients.

Dr. JOHN B. MURPHY (Chicago) also held a surgical clinic in the afternoon.

St. John, New Brunswick, was chosen as the next place of meeting, and Dr. Murray Maclaren, of that city, was elected President for next year.

London, Ontario.

MEDICAL PRACTICE UNDER THE INSURANCE ACT.

(BY OUR SPECIAL COMMISSIONER.)

(*Continued from p. 177.*)

XVII.—MANCHESTER: OPPOSITION TO THE ACT; THE POOLING SYSTEM.

FOR a long time Manchester has been an active centre for the organisation of medical men to resist hospital abuse and the evils arising from club practice. Over and over again in the editorial columns of this paper, and through the letters of local correspondents, this has been made clear. In Manchester was founded the Medical Guild, whose activities are surely well known to readers of THE LANCET. When the new constitution of the British Medical Association came into being many smaller bodies like the Medical Guild were to a great extent absorbed, their principal workers becoming officers of the Association. In this way, for practical and local purposes a joint committee of the Manchester and Salford divisions of the British Medical Association, consisting of 25 members, became representative, more or less, of the locality. There are four divisions of the Association in Manchester and one in Salford, and each elected five members on the joint committee. This committee became the executive of the organised forces of the medical profession. There is no special resolution or statute confirming any powers which this committee may require or act upon, but by the force of circumstances its vote became influential if not authoritative. The joint committee came into existence before the question of compulsory insurance was before the public. The object then in view was a proposal to appoint whole-time midwifery surgeons for the purpose of attending on the poor. The joint committee combated this project and helped the city council to establish a tariff for such work. The attending surgeons under this tariff were to be paid according to work done and the appointment of whole-time officers was avoided. The tariff for such payments was to be based on the total earnings of the family, who were free to select their own medical attendant. It will be seen that the principle established in regard to midwifery cases among the poor was quite opposed to the contract system and to the capitation fees that form the basis upon which the administration of medical benefits under the National Insurance Act is founded. By reason of their previous experience the majority of the Manchester and Salford practitioners were quite disposed to resist the National Insurance Bill as soon as it appeared on the *tapis*, and circulars were sent round as late as December, 1912, calling upon all local practitioners not to accept service under a measure with such provisions. At the same time, if the cardinal points brought forward by the British Medical Association had been granted, there would have been no opposition to the Act on the part of the practitioner. Of these points the establishing of a wage limit was considered in Manchester to be by far and away the most important. The general and correct impression that the Act meant an extension of club practice prevailed, and resistance was threatened largely on the score of the old and great grievance against the Friendly and other Societies that they accepted as members persons who could well afford to pay medical fees. Much bitterness was displayed over the question of a wage limit, and the proposal to limit medical benefits to the £2 a week income was twice brought forward at the instance of influential Manchester men. On each occasion it was defeated, but it is important to note that there was a good minority in its favour. In this respect Manchester differs from the majority of other places, for, curiously enough in my opinion, the proposal to establish a wage limit was little discussed in many localities where opposition to the measure was keen. In Manchester I found the opinion prevailed that there was no other solution than that of establishing the income limit if the profession were to work the Act with pleasure.

Abuses continued under the Pooling System.

It was the Salford practitioners who first formed a scheme for working the Act without applying the contract system. Manchester promptly agreed that they would also adopt the Salford scheme, and an official came from London to inquire into an interesting and serious position. The

result of this inquiry was that consent was given on behalf of the Government to the local scheme, and thus what is known as the pooling system came into existence. The payment was to be for attendance under the supervision of the Local Medical Committee, and "doctors on the list" took the place of panel doctors. The pooling scheme was adopted on Jan. 5th, 1913. This system, while it has brought into existence special grievances of its own, has not done away in any notable manner with objections to the Act where it is worked in the usual way. The trouble about contracting out still remains. The new rule in this respect means that the medical attendant goes on the panel for the limited number of patients who are defined as having contracted out, and that the patient is liable for the balance of his account. Again, we have to note at Manchester the same grievance as elsewhere—namely, that wealthy men insist on insuring their grown-up sons and daughters on the pretext that they are employed persons earning less than £160 a year. According to one of the local practitioners who has done much to organise the profession, at least a quarter of the persons at Manchester who are now insured under the Act were paying medical fees before the Act came into force. He told me of a panel chemist who had made up prescriptions under the Act for three insured persons each belonging to families earning in the aggregate more than £700 a year, though the earnings of no one member might be over £160 per annum. "The fact that many persons who used to pay fees are now insured means that many practitioners who were doing honourable work are now degraded to contract work," remarked another well-known practitioner. "They feel they are driven into a corner, that they must live and must earn their living according to the ways and means given them." I derived the general impression that if a wage limit were imposed on patients and the number of insured persons inscribed on the lists of the panel doctors limited, the capitation system could be accepted in Manchester and the whole difficulty of working the Act removed.

Details of Application of the Pooling System.

The pooling system is probably well enough known to readers of THE LANCET not to need lengthy explanation. Under it insured persons do not inscribe their names on the list of a panel doctor, but send when illness occurs for any practitioner whose name is on the list. The insured are at liberty to change their medical attendant as often as they choose. The practitioner on his side sends in the bill to the Insurance Committee. The fees claimed must be according to the tariff agreed upon—namely, 2*s.* if the patient calls on the doctor, and 2*s.* 6*d.* if the doctor calls on the patient. Special visits—namely, those paid the same day in response to a call received after 10 A.M.—3*s.* 6*d.*, and night visits 5*s.* Surgical operations requiring local anæsthesia (other than incision of abscess), 10*s.* 6*d.* Abortions and miscarriages are to be treated at the ordinary rates; administration of general anæsthetics, £1 1*s.*; setting of fracture or reduction of dislocation, 10*s.* 6*d.*; and sanatorium benefit report, Med. 2, 5*s.*; ordinary fees for succeeding visits or consultations. At these rates, however, it soon became evident that the 7*s.* contributed yearly by every insured person would not suffice to pay the bills sent in. Yet this tariff is below that paid before the Act by a large proportion of the persons who are now under the Act. As there is not money enough to go round, a system had to be devised as a basis for cutting down the bills sent in. Therefore a case average was calculated, and if attendances in any one case exceed the average some explanation is required, or the sum claimed is reduced to the average.

Financial Results of the Pooling System.

As the Act came into operation during the worst part of the year, the amount available for the first six weeks was equal to only 12*s.* 6*d.* for every £1 charged. At Manchester up to March 31st, 1913, there had been 247,799 attendances at the house or surgery of the "doctors on the list," and the latter had paid 68,685 visits, 1351 special visits, and 498 night visits. Then they undertook 426 operations, for which a fee of 10*s.* 6*d.* is allowed; had anæsthetics administered 20 times, and attended to 45 fractures or dislocations. The total charges for all this work were £33,994 14*s.* 6*d.*, and this covers the period from Jan. 15th to March 31st, 1913. The accounts are made up separately by the Insurance Committee for each practitioner, and the latter is charged 5*s.* annually to cover the working expenses. The Insurance Committee is not paid for this control work, but the clerks are familiar with it and it does not take up much of their time. Every doctor on the list has to send in his day book sheets. Their calculations and additions are so often wrong that they must all be carefully checked. The same accounts are submitted to the Local Medical Committee and the latter, acting on the average cost of each case, reduced the charges made by the medical practitioners from £33,994 to £31,477, and of this latter sum £20,929 have been paid on account. Thus the doctors on the list have received about two-thirds of what they claimed; but this is only a payment on account. Each practitioner is credited with the full amount, though during the year only payments on account will be made. When the total amount of the pool at the end of the year is ascertained, the balance remaining in the pool will be divided *pro rata*. The payments effected by insured persons vary constantly. Some die, some go away, and others simply refuse to pay. In the same manner, the incidence of sickness changes according to the season and the weather, not to mention occasional epidemics. If in the worst part of the year the doctors obtained 12*s.* 6*d.* in the £, the yearly average is likely to be much above that figure. On the first published list there were 309 practitioners working the Act; since then there have been a few additions and a few withdrawals. The second list published at the end of May, 1913, shows that for the second quarter 284 practitioners accepted service, a net reduction of 25. The explanation given is that many of the latter reside outside Manchester, but having a few patients in Manchester they put their names down presuming that it might be of some advantage to them. Experience, however, has shown them it was not worth while doing so. While these practitioners have not had enough work to induce them to continue service, others have had too much to do. The accounts sent in show that some practitioners have treated from 400 to 500 different patients in one month. Some of these practitioners have assistants, though the names of their assistants do not appear on the list. One or two practitioners have treated even more than 500 different persons in the course of a single month. As the average number of different persons treated by any one practitioner in a month varies from 100 to 200, it will be easily understood that the figures given above are taken as evidence of a very serious abuse. The total number of different persons treated was 24,660 in January, 39,598 in February, and 40,250 in March.

Further Results of the Pooling System.

The Manchester Medical Committee, in a circular dealing with the earliest of the figures given above, points out that the daily average of cases was 1451 in January and 1414 in February; and as this is practically no change, it disposes of the idea that there was a considerable rush in the early days of the medical benefit. The circular further urges that the figures strongly support the assertions made by the profession as to the incidence of disease, and show that Mr. Masterman was too optimistic when dealing with the amount of sickness to be anticipated. The average cost of each patient is estimated at 5*s.* 4*d.* in January and 6*s.* 9*d.* in February. "Each account above these averages was scrutinised twice by two different pairs of members of the Subcommittee and reduced either to the average or an allowance made when satisfactory explanations were given for the excess by the practitioner. The accounts above the average, for which no explanations were forthcoming, were then reduced to a general average." These accounts, the Medical Committee in their circular just quoted, show "how much more accurate was the profession's estimate of 8*s.* 6*d.* as the minimum amount *per caput* on which the scheme could efficiently be worked than the estimate of 6*s.* 6*d.* of the Chancellor of the Exchequer. If the 8*s.* 6*d.* had been granted it is probable that, for work on the lines of ordinary private practice, approximately 20*s.* in the £ would have been paid."

Actually the number of persons insured at Manchester amounts to 254,000, and after much toil the distribution of benefits among those who fall ill is working much better. There are less delay and fewer complaints. At the Insurance Committee no serious complaints as to unsatisfactory attendance or neglect on the part of medical men have been received. Such slight complaints as have been made were so trivial that not one of them was of sufficient importance

to bring it before the notice of the medical superintendent. This, of course, is one of the advantages of the pooling system. As the medical practitioner is never certain of keeping his patient he has to show him every attention; and the oftener the patient comes or requests a visit the better. But under the capitation system it is just the reverse. Some indelicate practitioners, I am assured, have been encouraging their patients to call often; but they will find themselves in an awkward position if, at Manchester as at Salford, the pool is abolished and the capitation system established. The people who have been taught to call often will have to unlearn the lesson given and some pretext must be found for telling them not to call so frequently.

(To be continued.)

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Midwives Act.

THE official cards of the Birmingham union used by certified midwives for the purpose of obtaining the assistance of a medical man in a case of emergency have in practice led to difficulties. The guardians have now withdrawn them and they will not in future be used. It is recognised that there may be some cases among persons not entitled to maternity benefit under the Insurance Act in which a medical practitioner cannot obtain his fees. In such cases when a doctor is called in by a certified midwife the guardians will pay a reasonable fee subject to their being satisfied (*a*) that maternity benefit is not payable in the case; (*b*) that the medical practitioner has made reasonable efforts to secure payment; and (*c*) that the head of the family is too poor to pay the fee.

Birmingham and Midland Hospital for Women.

Birmingham was the first authority to make puerperal fever a notifiable disease. A further step has now been taken in the opening of a special ward for these cases at the Women's Hospital at Sparkhill. Two years ago, under an arrangement with the city council, two beds were reserved for puerperal fever cases, but this number was soon increased to seven. These proved inadequate, and a new building has been erected costing £6000. This sum has been given by friends of the hospital, with the exception of £600 still required. The city has contributed nothing to the capital expenditure, but agrees to give three-fifths of the annual cost of maintenance. The new ward is isolated and self-contained, and will accommodate 25 patients. It has a sheltered south verandah with six beds for open-air treatment.

July 22nd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Appointments at the University of Edinburgh.

THE Edinburgh University Court on July 14th elected Charles Glover Barkla, M.A., D.Sc., F.R.S., Wheatstone professor of physics in King's College, London, to be professor of natural philosophy in the University of Edinburgh, in succession to the late Professor MacGregor. Dr. James Ritchie, superintendent of the laboratory of the Royal College of Physicians, Edinburgh, was appointed to the chair of bacteriology recently instituted in the University.

The University and the Royal Infirmary.

An agreement between the University Court and the board of managers of the Royal Infirmary establishing a close and intimate relationship between the University and the Royal Infirmary in respect of the work of the pathological department, and also regarding clinical arrangements in medicine, surgery, and gynæcology, was considered at the same court and approved, with a view to bringing the provisions of certain sections into effect as from next October. An application was also granted on behalf of the teachers for the medical education of women in Edinburgh for recognition for the next academical year, and the appointments of University assistants and lecturers were made for the same period.

Assistant Medical Officer (Tuberculosis Officer) for Edinburgh.

At a joint meeting of the sanatorium subcommittee of the Edinburgh Insurance Committee and a subcommittee of the public health committee of the town council it was unanimously agreed to recommend the appointment of Dr. John Guy as assistant medical officer of health for the town and also to act as tuberculosis officer. The salary is £500 per annum, and there were three applications for the post. For the last six months Dr. Guy has been acting as tuberculosis officer for the county of Gloucester and expert adviser to the County Insurance Committee there.

Honour to Sir Charles Bedford.

The University of St. Andrews has recently conferred the degree of Doctor of Laws (LL.D.), *honoris causâ*, on Lieutenant-Colonel Sir Charles H. Bedford, D.Sc., M.D. Edin., I.M.S. (retired), in recognition of his researches and administrative work in India, more especially relating to excise and customs' questions. Sir Charles Bedford retired from the Indian Medical Service, after 22 years' service, in 1911, and was knighted the same year.

July 22nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Delegates' Meeting.

A MEETING of delegates representative of the medical profession of Ireland was held at the Royal College of Surgeons on July 17th, Dr. P. J. MacNamara, of Kilmallock, in the chair. The meeting was well attended, and though an unnecessary amount of temper appeared at times, a great deal of useful business was got through. In the first place, the question of organisation was discussed. The agenda committee had suggested that the new executive committee should have as its nucleus the old conjoint committee, but should be strengthened by the addition of direct representatives of each insurance area. The principle of this suggestion was adopted, but an important modification was made. Instead of the entire body of the Irish Committee of the British Medical Association, some 15 or more in number, with an equal number from the Irish Medical Association, being included in the executive committee, the representation of these bodies is cut down to one member each. At first sight this has merely the effect of making the committee less unwieldy, but it has also the important result that it deprives the executive of what has been up to the present its only certain income. Hitherto the British Medical Association has contributed £200 a year and the Irish Medical Association £100 a year to the conjoint committee, and this has constituted its entire income, except £90 received as a subscription of 10*s.* per head from 180 medical practitioners. Unless, therefore, members of the profession are willing to contribute directly for the support of the professional organisation, the step taken may prove a very serious one. The meeting authorised the new committee to levy a subscription of £1 per head on all medical men in Ireland. The new committee is to be called the Irish Medical Committee, and the constitution will be as follows:—(1) One member elected by the medical men of each insurance area; (2) three members elected each by Belfast, Cork, and Dublin, and one by Londonderry, Waterford, Limerick, and Galway; (3) one representative of each of the following bodies—the University of Dublin Medical School, University College Medical School, the Queen's University Medical School, the Royal College of Physicians, the Royal College of Surgeons, the Apothecaries' Hall, the Medical School of University College, Cork, and of Galway, the Royal Academy of Medicine, the Ulster Medical Society, the Cork Medical Society, and the Belfast Medical Guild; (4) two representatives appointed by the medical women of Ireland. This committee is to replace the former conjoint committee of the Irish Medical and the British Medical Associations, and no representatives are to be elected by any branch of the Irish Medical or of the British Medical Associations in Ireland. The first meeting of

this new committee—of which Mr. M. R. J. Hayes has been appointed secretary—is to be held on Wednesday, August 27th. Resolutions were also passed at the meeting of medical delegates held in Dublin on July 17th, censuring the Insurance Commissioners for appointing "medical advisers" for the purpose of certification, and in consequence of this the meeting called on medical men to withdraw from the panels as soon as they can legally do so; and further, reiterated the determination of the medical delegates not to accept service under the National Insurance Act so long as the Chancellor of the Exchequer ignores the demands of the medical profession. As the Report of the Medical Benefit Inquiry Committee was not yet forthcoming, the meeting could not enter into any detailed discussion of the subject. It therefore contented itself with passing a resolution pledging the profession, in the event of the benefit being extended to Ireland, not to accept lower terms than have been granted in England.

Medical Benefits in Ireland.

The Departmental Committee appointed to consider the question of the extension of medical benefits to Ireland met again in London on July 18th for the consideration of an interim report, as they had been unable previously to come to a decision. By a majority of 6 to 3, it is said, they agreed to an interim report recommending the extension of medical benefits to the six county boroughs—Dublin, Belfast, Limerick, Cork, Waterford, and Londonderry—while a minority of three dissented. It is doubtful whether any legislation can take place this year, because before the reports, Majority and Minority, can be laid on the table of the House of Commons the session will be practically over. What specially concerns the medical profession is the terms on which the majority of this Departmental Committee recommend the extension of these benefits. Report says that they are the same as in England, but with this difference that for the identical money equivalent given in England the dependents are to be included in Ireland.

Sanatorium Benefit in Ireland.

At the meeting of delegates recorded above a warm debate took place on the present position of sanatorium benefit in Ireland. The recent action of the Insurance Commissioners in interfering with the arrangements made between the profession and the Insurance Committees as regards the reporting of cases of tuberculosis has given rise to intense irritation on the part of the profession. It was suggested at the delegates' meeting that medical men throughout the country should forthwith refuse to assist in the administration of the sanatorium benefit. Cooler counsels, however, prevailed, and a resolution was carried warning the Insurance Commissioners that if they persisted in appointing "medical advisers" for the purpose of signing preliminary reports on cases of tuberculosis, the profession would find itself forced to withdraw from assisting in working the benefit.

Maternity Benefit in Ireland.

In relation to the maternity benefit a resolution was passed at the same meeting calling attention to the fact that many recipients of the benefit are attended only by unqualified midwives. This practice is fairly common in rural parts of Ireland, and appears to be permitted to go on unchecked both by the societies and the Insurance Commissioners, though it seems to be contrary to the terms of the Act.

The Non-Existent Insurance Committees.

The provisional Insurance Committees established in July, 1913, hold office up to July 15th, 1914. The representatives of the local authorities and the nominees of the Insurance Commissioners continue in office for another year, but arrangements were to have been made by which the societies were to elect their representatives at the beginning of the present month, so that the new committees might have been ready to enter into office without delay. Up to the present, however, the results of these elections have not been made known, and as a consequence there are no Insurance Committees in existence. The administration of the sanatorium benefit is suspended by the failure of the Insurance Commissioners to secure that the elections should be completed in proper time.

Derry Insurance Committee.

An account of what occurred at a meeting of the County Derry Insurance Committee, held in Coleraine on July 11th, shows the utter mess into which the National Insurance Act in Ireland has sunk. First, a letter was read from the Insurance Commissioners refusing to sanction the committee's proposal to appoint Dr. T. A. Adams, of Garvagh, as temporary medical adviser for County Derry at a salary of £200 per annum and travelling expenses. To this the committee replied asking the Commissioners to approve of a salary of £10 per month in the meantime. A further communication was then read from the Insurance Commissioners refusing to sanction the committee's proposal to pay the secretary £110 per annum, upon which he resigned, as he could not do such heavy work at the small remuneration allowed. Dr. Adams said if the Commissioners did not sanction his salary by the date of next meeting he would also resign his position. The chairman, having strongly appealed to the committee—who were about to do so—not to resign, a resolution was passed urgently requesting the Insurance Commissioners to reconsider their decision as to the clerk's salary, as the resignation of this most efficient officer would involve the committee in great inconvenience and loss.

July 22nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Medical Students and the Three Years Law.

AFTER the first year of military service, medical, pharmaceutical, and veterinary students will be permitted to demand the suspension (*sursis*) of their service to finish their studies. They will then be again called out to finish their two years as assistant surgeons, pharmacists, or veterinarians' assistants. The suspension will be granted only up to the completed age of 27 years. Those who have obtained 12 inscriptions and successfully undergo at the end of their first year of service the examination for assistant medical officer or pharmacist may be nominated to finish their last two years of service as assistant medical officers or pharmacists. The same will obtain under like conditions for those possessed of a civil veterinary diploma or who are admitted in their fourth year.

The Responsibility of the State in Case of Plague.

The Conseil d'État has ordered the owner company of the packet *La Gironde* to pay an indemnity of 4000 francs to Mme. Peytral, who, after undergoing quarantine and five days' complete isolation at Majunga, Madagascar, was refused access to the packet in spite of a clean bill of health from the sanitary service, on the ground that the crew of the boat which brought her to the ship had not been in quarantine. Mme. Peytral was consequently subjected to the loss of a month and demanded indemnity, which, after being refused by the Government of the colony, has been granted to her by the Conseil d'État. The judgment laid it down that the fact of having entrusted the transport of passengers to native sailors from an infected port without preliminary disinfection constitutes a fault.

A Donation to the Montpellier Faculty of Medicine.

Professor Grasset has given to the Faculty of Medicine of Montpellier the Broquette-Gonin Prize of 10,000 francs awarded to him this year by the Académie Française. The professorial assembly of the Faculty has decided that the interest of this sum shall be devoted to the foundation of a travelling scholarship to be awarded every five years to the most meritorious French medical student at Montpellier.

A Medical Deputy.

Dr. Dumont has been elected deputy from Issoudun (Indre).

The Employment of Children and Women in Shops.

The following decree has been published in the *Journal Officiel:* Art. 1. It is forbidden to employ at the outdoor stalls of shops boys under 14 years or girls under 16 years. Boys between 14 and 18, as well as girls between 16 and 18, may not be employed for more than six hours daily. Their employment must be by turns of duty of two hours at most, separated by at least one-hour intervals. The employment of young persons of 18 years or under and of women at any age in the outside stalls referred to is absolutely forbidden after 8 P.M. or when the temperature is

below zero C. In cold weather sufficient heating must be furnished for employees in the interior of the establishment. Art. 2. The heads of such establishments must be prepared to produce, whenever required by the inspectors, the birth certificate of every person under 18 years of age whom they employ.

The Genital Glands and the Dental System.

At the Academy of Sciences M. R. Robinson, of Paris, recently made a communication on the perfect preservation of the teeth in seven male donkeys aged between 10 and 14 years. These animals, which had been used in the experiments of Professor Lannelongue, were insusceptible of sexual excitement. Their food was hay. On the other hand, a young cryptorchid *griffon*, a very salacious beast, upon which the author had made a necropsy, had lost all its teeth when quite young. Toothache is said to occur in young masturbators, and it appears that true eunuchs have fine teeth, and the author concludes that a physiological relation exists between the genital glands and the dental system. The old belief of the effect of gestation upon the teeth may thus be true. As a result of his clinical observations, M. Robinson is satisfied that in diabetes and tabes it is through the intermediary of the genital glands that the teeth become worn, carious, or simply fall out. But, he asks, does there exist a reciprocal effect of the dental system on the physiology of the genital glands? In two cases the author has noted that the removal or the rapid loss of many teeth together induces gradual atrophy of the testicles and complete impotence. In the case therefore of one who loses in an unusual manner many teeth the genital organs should, he thinks, be examined, and, if necessary, the ovaries in case of chronic salpingitis, or the testicles in tumours or testicular tuberculosis should be removed. Further, rational opotherapy should remedy premature decay of the teeth. The communication was suggestive rather than convincing.

July 21st.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

An Organisation for the Prevention of Diseases Associated with War.

Professor Kraus, who has been invited to go to Buenos Aires, and Dr. Winter have worked out an organisation for the prevention of diseases associated with war, and the result of their labours may be of the utmost importance in all future wars. In the recent operations of the Balkan nations against Turkey, when the Bulgarian troops suffered from outbreaks of typhoid fever and cholera, Professor Kraus was invited by the King of Bulgaria to help against these insidious enemies in the camp, and in consequence of the experiences obtained under the conditions of actual warfare, the following scheme of essential requisites has been proposed: (1) A staff of experienced bacteriologists ready for emergency work; (2) portable laboratories for use in connexion with epidemics; and (3) classes for training nurses in the care of patients suffering from diseases associated with war. It is suggested that the organisation should be under the authority of the Board of Health in time of peace. It can render help in outbreaks of epidemics, in view of which contingency 12 large portable laboratories have been provided, each packed in four large trunks. They are fitted out with everything necessary for investigations involving microscopical or cultural work, and biological research such as agglutination tests. The required quantities of antidysenteric serum, and of vaccines against typhoid fever and cholera are always ready at hand. In case of war, each of these portable laboratories will be under the direction of a professor of bacteriology or hygiene. The equipment of the laboratories is sufficient for the examination and sterilisation of water, for making bacteriological examinations of healthy persons and patients, for the performance of prophylactic vaccination, for the disinfection of dwellings and clothing, and for some other purposes. Attempts will be made to take international action for the prevention of diseases associated with war, and it is very favourable for the object in view that the German Red Cross Society has promised to second this Austrian idea of extending the range of international voluntary help in war time so as to include the prevention or limitation of diseases associated with war. The matter will be discussed at the next general meeting of the various national Red Cross societies in Geneva.

New Expeditions of the Austro-Hungarian Red Cross Society to the Balkan War.

Owing to the outbreak of the second war in the Balkan countries urgent appeals for immediate help have been made to the Austro-Hungarian Red Cross Society. The deficiencies of the medical arrangements made by the belligerents on both sides are now even more marked than during the previous war. The numbers of wounded men are higher than before, the soldiers are more exhausted, the transport less easy, and the funds of the Army Medical Corps of the belligerents seem to be exhausted. One result of the experiences obtained in the former expeditions is the fact that a sufficient number of trained nurses has been asked to accompany the medical officers this time. It will be remembered that, especially in Bulgaria, the volunteer female nurses were complete failures, and that at that time the foreign medical men complained seriously that the ladies of Sofia who offered their services as nurses were in every way unfitted for the duties which they undertook. The present expeditions have been distributed equally between Belgrade and Sofia, both belligerents being greatly in want of such assistance.

Total Alopecia Caused by Mental Shock.

An interesting case of total loss of hair in close connexion with a mental shock was shown by Dr. Nobel at a recent meeting of the Vienna Medical Society. The patient was a tramcar driver who had sustained a severe fright whilst attempting to avert a threatened collision of his car with an automobile. He jumped from his platform just a moment before the crash occurred, and thus sustained no physical injury, but he lost the power of speech for some minutes. That was the only immediate result of the fright, but a few days later he noticed that the hair of his head and beard came off in handfuls. Within a short time his eyebrows and eyelashes fell out, and in the next few weeks he developed a complete alopecia all over the body, so that with the exception of a few hairs in the axillæ and on the pubes his skin was everywhere glossy, smooth, and free from any hair at all. The colour of the skin, as well as the structure of the follicles, did not appear to have suffered. An explanation of this undoubtedly trophoneurotic condition could be found in the fact that the arterioles of the skin had been temporarily blocked by an intense vaso-constrictor impulse (spasm) due to cortical irritation (fright). Dr. Nobel said that this temporary interruption of the circulation might cause disintegration of the matrix-cells, and thus promote the falling out of the hair shafts.

July 21st.

CANADA.

(FROM OUR OWN CORRESPONDENTS.)

Dominion Medical Council.

THE Dominion Medical Council has recently held a meeting in Ottawa, when its organisation was completed and by-laws and regulations were adopted for the requisite approval of the Federal Government. The first Dominion examinations will be held in Montreal on Oct. 7th. The Dominion register opened at Ottawa on July 1st, Confederation Day, and also the date of the founding of the Canadian Medical Association 46 years ago, an organisation which through the keen efforts of Dr. T. G. Roddick has eventually carried Dominion registration to a successful completion. The first annual meeting of the Dominion Council will be held in Ottawa on June 16th, 1914. By this Act the provincial councils are not abolished, but a medical graduate who now passes the Dominion Council may without further examination practise anywhere in Canada upon registering with the provincial body. Physicians of good standing in any province who for ten years prior to October, 1912, practised in any one province may now be registered in the Dominion Council without examination on the payment of a registration fee of $100. The Dominion examination is not necessary for any graduate who locates in any province

and intends to stay there, but he cannot practise in any other province unless he takes its provincial examination, or the Dominion examination, or has been ten years in practice prior to October, 1912. The Hon. Dr. Roche, Minister of the Interior, who convened the first meeting, was made an honorary member. The father of the measure, Dr. Roddick, is the president, and will sign the register first. Dr. R. W. Powell, 100, Cooper-street, Ottawa, is the registrar.

Opening of New Toronto General Hospital.

On June 19th, as was briefly announced in a previous communication, the Lieutenant-Governor of Ontario, Sir John Gibson, declared the new Toronto General Hospital open for the reception of patients. His honour expressed the regret of the board of trustees and the citizens at the absence of H.R.H. the Duke of Connaught, who, it was expected, would have performed this duty. Mr. J. W. Flavelle, the chairman of the board of trustees, presided, and gave a historical account of the old Toronto General Hospital since the year 1818. He referred to the contributions which had made the new institution possible, and described the new building, grounds, and equipment. The out-patient building, which cost $100,000, was presented by Mr. Cawthra Mulock, of Toronto; a similar sum was given by the Massey estate; Mr. J. C. Eaton gave $300,000 for the surgical building, and quite recently an additional contribution of $50,000; an anonymous donor gave $300,000; the Misses Shields, Toronto, $140,000 for the emergency hospital; the Ontario Government, on behalf of the University of Toronto, for the pathological building, $300,000; the city of Toronto $200,000, and within a few days of the opening a further grant of $210,000. In addition there were many large and numerous small contributions from Toronto citizens. $300,000 still remain to be collected to complete the institution. The hospital buildings surround a square of land 9 acres in extent, with lawns, trees, shrubs, flowers, and recreation-grounds. They occupy an entire block almost in the heart of the city and close to the University medical buildings, thus facilitating clinical work for students and teachers alike. There will be accommodation for 670 patients, and, as far as size, newness, and modern equipment go, there is probably one only in America to compare with it—namely, the new hospital in Cincinnati, U.S.A., which will accommodate 600. It easily leads in Canada, the Royal Victoria in Montreal accommodating about 200 and the Montreal General 400, about the same as the old Toronto General. Situated on the corner of College- and University-avenues, its administration building occupies the central position on College-street. In it, besides the executive offices, there are 36 beds on the main floor for semi-public patients. On the second are public wards, with 44 beds for eye, ear, nose, and throat cases. On the third floor 40 beds for gynæcological cases, whilst the fourth is fitted up comfortably for interne quarters, but will be used for private patients until the building for those is completed in the fall. The east wing of the main building is the surgical building. Six wards in this accommodate 120 patients, and on each of the three floors are modern thoroughly equipped operating suites. The medical wing, to the west of the administration building, has a similar number of wards for as many patients as the surgical wing. At some distance behind the surgical wing is the nurses' residence, with private gardens and tennis-courts adjoining. The obstetrical building will not be completed until October. The power-house, situated at the south-eastern corner of the lot, provides artificial light, heat, and power. The construction is of steel, Milton pressed brick, faced with freestone, and it is estimated that 22,000,000 bricks were used.

A Royal Commission in Ontario with a Medical Reference.

In his address receiving the new Toronto General Hospital on behalf of the people of Toronto and Province of Ontario, Sir James Whitney, the Provincial Prime Minister, announced that his Government had decided to appoint a Royal Commission on Medical Education and the Practice of Medicine in Ontario, the object being to acquire information whereon to base legislation for a new Ontario Medical Act. This Commission will define the term medicine, and will deal with all plans or means of alleviating or curing human defects, disorders, diseases, or wounds, so as to control all in the interests of the people of the province. Investigations will be made of the College of Physicians and Surgeons, the Ontario Medical Council, the medical departments of the universities, osteopathy, massage, dental colleges, nurses' training schools, and opticians and their training, as well as of the practice of any branch of medicine by Christian Scientists and other sects. A report of such a comprehensive character should be full of interest.

Cigarette Smoking and Drinking in Canada.

According to a report just issued by the Inland Revenue Department of Canada, 975,325,501 cigarettes were consumed in Canada in 1912, or nearly 200,000,000 more than in 1911. The consumption of tobacco and alcohol has increased during the year as follows: spirits, 1·112 gallons *per capita*, compared with 1·030 in 1911; beer, 7·005 gallons, as against 6·598 gallons; wine, 0·131, as against 0·114; and tobacco, 3·818 lb., against 3·679 lb., the latter figures including the cigarettes. The increased consumption of liquor is said to be largely due to the immigration, which is also responsible for the increase in crime. Since 1901 there has been an increase in population of 34 per cent., but the court convictions for drunkenness have increased by 225 per cent. From 12,727 in 1901 the convictions increased to 41,279 in 1911. The nationality is not specified, but of 12,600 convictions for serious offences one-half of the offenders were born outside of Canada, while of the people of Canada only one-fifth are foreign born. Wholesale importation of immigrants from continental Europe brings troubles of its own.

Appointments and Resignations.

Dr. Helen MacMurchy, Toronto, who for several years has taken an active interest in infant mortality, the care of the feeble-minded, and other public health questions, has been appointed assistant inspector of hospitals and public charities in Ontario, with special supervision over the feeble-minded. Dr. N. E. MacKay has resigned the professorship of surgery in Dalhousie University, Halifax, N.S. Dr. Walter Bapty, Victoria, B.C., has been appointed inspector of hospitals for British Columbia. Dr. J. Algernon Temple, Toronto, formerly dean of Trinity Medical College, and for many years a teacher of obstetrics and gynæcology, has received the degree of LL.D. from his *alma mater*, McGill University.

July 14th.

Obituary.

WILLIAM HENRY LANGLEY, C.M.G., F.R.C.S. IREL.,

PRINCIPAL MEDICAL OFFICER OF SOUTHERN NIGERIA.

THE Honourable William Henry Langley was principal medical officer of Southern Nigeria from 1911, and had been previously deputy principal medical officer in Northern Nigeria and principal medical officer in the Gold Coast Colony. He was only 44 years of age at the time of his death. He had enjoyed good health up to the middle of last April, but about that date he first showed signs of impaired vigour, and died from heart failure on June 11th.

Mr. Langley received his medical education at the Carmichael College of Medicine, Dublin, and at the Royal College of Surgeons in Ireland. In 1893 he became a Licentiate of the Royal Colleges of Physicians and Surgeons in Ireland, taking the Fellowship of the College of Surgeons in 1902. His official career was distinguished. He served in the Borgu operations of 1897–98, for which he received a medal and two clasps; in the Kontagora expedition of 1900, for his services in which he was mentioned in despatches and received a medal and clasp; and with the Kano Sokoto expedition of 1903, his services in which were rewarded with special mention, a clasp, and the Companionship of the Order of St. Michael and St. George. In an official communication to the Secretary of State for the Colonies, Sir Frederick Lugard, Governor of Southern Nigeria, wrote under date June 12th: "Dr. Langley's death is a very great loss indeed to Nigeria. I had intended to recommend him to you for the proposed appointment of director of medical department under the scheme of amalgamation. There is no officer in the West African Medical Service who has the personal knowledge of both Protectorates possessed by Dr. Langley. I have known him intimately

since I recommended him for appointment, and I feel his death keenly as a personal loss."

A tribute to Mr. Langley's personal character appears in the Southern Nigerian Government Gazette Extraordinary, dated June 12th, which says: "Apart from the great services he has rendered to West Africa as Deputy Principal Medical Officer in Northern Nigeria, as Principal Medical Officer in the Colony of the Gold Coast, and recently as Principal Medical Officer of Southern Nigeria, he can well be said to have endeared himself by charm of manner and quality of mind to all with whom he came in contact, whether officials or non-officials, throughout West Africa."

He was buried with full military honours, the Deputy Governor of Southern Nigeria, in the absence in England of Sir Frederick Lugard, being present, with members of the executive and legislative councils.

CABANIS DOMINIC FRANCIS DE MELLO, L.R.C.P., L.R.C.S. EDIN., L.F.P.S. GLASG.,

KNIGHT COMMANDER OF THE MILITARY ORDER OF CONCEPTION.

MANY friends in India and Portugal will hear with regret of the death of Commander Cabanis de Mello, which took place somewhat suddenly at Bombay on June 12th. Commander de Mello was educated at Bombay and at Glasgow, where he took the triple Scottish qualification in 1888. At Glasgow, where he resided for some time, he showed promise of a successful career, which he afterwards fulfilled. On returning to India, where his life was mostly spent, his keen interest in advanced methods of treatment led to his early and active advocacy of the methods of Professor Haffkine, and in the face of much opposition he succeeded in raising a sufficient sum of money to start plague inoculation in Poona. Professor Haffkine went to Poona at his request, and de Mello was himself the first to be inoculated, and kept a careful diary of the temperature and sensations which resulted from the inoculation. He was especially interested in the prevention and treatment of rabies, and was a contributor to both English and Portuguese medical journals on this and other subjects of interest to Europeans resident in Portuguese India. He always showed that he was abreast of scientific thought, and was also popular among his patients, for he was considerate and gentle in manner and spared no pains for their welfare. For his services to the Portuguese settlement of Goa, in Bombay, Dom Carlos of Portugal created him a Knight Commander of the Military Order of Conception.

He married in 1889 Annabel Macmillan, the eldest daughter of the late Thomas Macmillan, who survives him.

THE LATE PROFESSOR GOTCH.—We are deferring until next week the full obituary notice of the late Professor Gotch, in deference to the wishes of the distinguished physiologist who has accepted our invitation to write it.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Franz Samuely, extraordinary professor of medicine in the University of Freiburg, aged 33.—Dr. Paul Goyne, formerly professor of pathological anatomy in Bordeaux and corresponding member of the Paris Academy of Medicine.—Dr. Severin Lachapelle, professor of children's diseases in Laval University, Montreal.—Dr. James Nelson Martin, formerly professor of midwifery and gynæcology in Ann Arbor University, Michigan.

DONATIONS AND BEQUESTS.—Among the legacies left by the late Mr. J. S. Fry are the following: £25,000 to Bristol General Hospital, £5000 to Jubilee Convalescent Home, Bristol, £5000 to Bristol Royal Infirmary, £2000 to Bristol Hospital for Sick Children and Women, £2000 to Bristol Voluntary Lock Hospital, £1000 to Bristol Dispensary, and £2000 to Bristol Eye Hospital.—The late Mr. George John Fenwick, of Bournemouth, has left £50,000 to the Royal Victoria Infirmary, Newcastle, to be invested as a permanent endowment fund, and a legacy of £1000 for the general purposes of the infirmary.

THE BRITISH MEDICAL ASSOCIATION.

EIGHTY-FIRST ANNUAL MEETING AT BRIGHTON.

THE eighty-first annual meeting of the British Medical Association began on July 23rd at Brighton under the presidency of Dr. W. Ainslie Hollis, consulting physician to the Sussex County Hospital. The meeting proper was preceded as usual by the annual meeting of the Representative Body, which lasted from July 18th to July 24th. On Tuesday, July 22nd, the annual general meeting of the Association was held in the Hove Town-hall, and the outgoing President, Sir James Barr, handed over the badge of office to his successor, Dr. Ainslie Hollis, who delivered that evening the presidential address in the Dome.

The British Medical Association last met at Brighton 27 years ago, and since that time the linked boroughs of Brighton and Hove and the Association have both grown considerably in size. The honorary local secretary of the 1886 meeting was Mr. T. Jenner Verrall, then in practice at Brighton, and now the popular chairman of the Representative Body, whose re-election to that office for the ensuing year was announced on July 18th. The honorary local secretary of the present meeting, which is in progress as we go to press, is Dr. L. A. Parry. An attractive social programme has been arranged by the local executive, and in spite of the close proximity of the International Medical Congress in London the success of the Brighton meeting is already assured.

Wednesday, Thursday, and Friday mornings were, as usual, set aside for the meetings of the scientific sections, which have been reduced this year in number from 20 to 16. Anatomy, Physiology, and Anæsthetics have been dropped, while Otology has been joined up again with Laryngology and Rhinology, and Bacteriology with Pathology. Climatology and Balneology, on the other hand, have been honoured with a joint section to themselves, in which the principal and apposite discussions are on Sea Bathing and on the International Aspects of British Health Resorts. The Addresses in Medicine and Surgery, which were delivered respectively on Wednesday and Thursday afternoons in the Pavilion by Professor G. R. Murray, of Manchester, and Sir Berkeley Moynihan, of Leeds, are printed in full in the present issue of THE LANCET. The popular lecture will be delivered this evening (Friday, July 25th) in the Dome by Mr. Edmund J. Spitta, of Brighton. Reports of the proceedings of the scientific sections will appear in our next issue.

At the annual general meeting on Tuesday afternoon, after a vote of thanks to the retiring president had been passed, it was officially announced that the Association would meet in 1914 at Aberdeen, and the President-Elect, Sir Alexander Ogston, K.C.V.O., was introduced. Sir Alexander Ogston is consulting surgeon to the Aberdeen Royal Infirmary and Emeritus Regius Professor of Surgery in the University of Aberdeen. On Tuesday evening, before the president's address, Dr. J. A. MacDonald, the chairman of Council, who has done admirable work for the Association, was presented with the gold medal of merit. Sir James Barr, in introducing Dr. Ainslie Hollis to the presidential chair, said that he relinquished his office with reluctance. It had been a fighting year, and when there was any fighting he liked to be in the middle of it. He still adhered to his

opinion, expressed 12 months ago, that the National Insurance Act was a fraud upon the public. The administration of the Act was costing seven or eight million pounds a year, while the medical profession, which did all the work, was only getting five or six millions. Dr. Hollis thanked the Association for the honour it had paid him in electing him President. The vote of thanks to the outgoing President was proposed by Mr. E. B. Turner and seconded by Mr. D. F. Todd.

On Wednesday the annual church service was held in the afternoon at St. Peter's Church. On the same morning a Roman Catholic service was held at 9 A.M. at St. John Baptist's Church. On Wednesday, Thursday, and Friday a large number of social entertainments were provided by the municipalities of Brighton and Hove and by individual hosts and hostesses. These will be referred to in our next issue. By permission of the Council of the Association the summer meeting of the Irish Medical Schools and Graduates Association was held on Wednesday under the chairmanship of the President, Dr. William Douglas, and on Thursday a breakfast was given by the National Temperance League, with Dr. Ainslie Hollis in the chair.

The annual exhibition of surgical instruments, drugs, special foods, and sanitary appliances was held in the Corn Exchange, which immediately adjoins the Dome. Some *éclat* was given to the proceedings on Tuesday morning by the fact of the mayor attending to declare formally the opening of the exhibition. The mayor was accompanied by the President, Dr. Hollis.

The building was admirably adapted for the purpose, and afforded the exhibitors a full opportunity of displaying their exhibits to the best advantage. There was ample room, and although the exhibition compared with recent years was, in fact, a small one it was interesting and well attended. It was generally admitted that the proximity of the exhibition announced to be held in connexion with the International Medical Congress militated against the exhibition at Brighton.

The exhibits at Brighton, however, proved of very general interest, judging from the quite good attendance of the visitors. The proximity of the building to the Dome, in which were being held meetings of the first importance to the medical profession, was one reason of this satisfactory attendance.

Surgical instruments and appliances appeared to claim as much attention as anything else, several of the leading makers being represented, their exhibits affording a really excellent review of surgical advances. Aseptic furniture, sterilising tanks, and anæsthetic apparatus formed an interesting section in this division. Beyond some apparatus used in radiant heat and light treatment, electrotherapeutic appliances found practically no exponents. X ray and high-frequency apparatus and treatment by iontophoresic methods form generally an attraction to the visitors at this annual exhibition, but in regard to this department they were on this occasion sent empty away. On the other hand, there was an interesting demonstration of drugs, and more particularly of the animal substances upon the use of which organotherapy is founded. Preparations containing hormones afforded an example, while treatment by vaccines, sera, and so forth, was well illustrated in a series of preparations evidencing strict scientific attention. Fine chemicals and elegant pharmaceutical combinations, and ingenious forms for administration, made up an instructive section of the exhibits. Amongst special foods the favourites appeared to be those containing milk substances. Lastly, there was quite a library of medical science represented at the stalls of several well-known medical publishers.

THE PRESIDENTIAL ADDRESS.

THE MEDICAL HISTORY OF BRIGHTON.

Dr. Ainslie Hollis, in his interesting Presidential Address before the British Medical Association at Brighton, following up the example set at Carlisle in 1896 by Dr. Henry Barnes, and pursued last year at Liverpool by Dr. John Elliott, took his audience on what may be called a "personally conducted tour" through the medical history of Brighton and its neighbourhood down the ages. After a mere reference to the Pilt Down skull, which suggests that these southern acres were peopled hundreds of thousands of years ago, Dr. Hollis took his starting point in comparatively modern times—the Neolithic era. In view of the known cleverness of the stone age surgeon, he suggested the probability of many of the "pygmy flints" found on the Weald, with their sharp edges and needle-like points, having been used for trepanning, blooding, tattooing, or shaving. He called attention to two relics of the bronze age now in the local museum, as closely resembling a surgical director and scraper respectively.

Recalling Pliny's assertion [1] that the Roman people got on for 600 years without doctors, Dr. Hollis stated his inability to find evidences of the practice of medicine in that area during the Roman occupation or for centuries subsequently. In the Norman period the practice of medicine was mainly in the hands of the monks. He described the "fermorie," or infirmary, of the rich Cluniac Priory of St. Pancras at Lewes, with its beds arranged against the walls for the reception of the sick and infirm, as well as for those who had been bled; and in illustration of the state of hygiene in the fourteenth century he described its monastic latrine, consisting of apertures in the wall over an open drain outside, into which the dejecta fell and were carried off by a culvert into the river. The surgery of the age he described as consisting mainly of "blooding," and contrasted it depreciatively with the extensive operations and well-healed fractures, extant evidences of which testify to the daring and success of the surgeons of the Neolithic age. The dissolution of the monasteries under Henry VIII., like all sweeping changes in the social life of a people, probably entailed much misery on the sick and impotent poor. There was a dearth of qualified medical men—men with an Oxford or Cambridge degree or holding the Bishop's licence—and charlatans abounded. Many statutory privileges, such as exemption from jury service and bearing arms, improved social position, and the right to sue illegal practitioners, were accorded to the medical profession, but remained without effect in increasing its numbers and quality; and the refusal of the "companie and felowship of surgeons of London" to look after the sick poor gratuitously led to an Act in 1542 reducing those privileges and legalising unqualified practice to a limited degree. In 1580 Brighthelmston had one medical man, Dr. Mathews, whose terms for confinements were at Portslade and Rottingdean, 5*s*.; at Blatchington, 3*s*. 6*d*.; and anywhere in the town of Brighthelmston, 2*s*. 6*d*. In an unpublished letter to King Henry VIII., now in the British Museum, that monarch is advised not to come to Brighton as plague was then raging there, but Dr. Hollis was unable to find confirmatory evidence of this alleged visitation. A reference to Charles II.'s one night stay in Brighton gives occasion for a quotation from that able surgeon, Richard Wiseman, who, when referring to that monarch's reputation for curing the king's evil by touching, states: "I myself have been a frequent eye witness of many hundreds of cures performed by His Majesty's Touch alone: without any assistance of chirurgery: and those many of them, such as had tired out the endeavours of able chirurgeons before they came thither." Manual training for children was insisted on by the magistrates under an Order in Council at Whitehall, June 11th, 1630. The Brighton divisional area in the seventeenth century returned two medical men to Parliament: Dr. Nicholas Barbon for Bramber in 1690 and 1695, and Dr. William Quartermain for Shoreham in 1666. Among the noteworthy events of the eighteenth century may be

[1] Nat. Hist., xxix., c. 5.

mentioned the publication in 1749 in the *Lewes Journal* of the "Adventures of Roderick Random" by Dr. Tobias George Smollett, and the "discovery" of Brighton as a health resort in 1750, by Dr. Richard Russel, physician to St. Thomas's Hospital, who advocated the drinking of sea water in struma, constipation, renal calculus, "scirrhus," and other diseases. His contemporary, Dr. Speed, however, attributed Russel's results to "the prudent use of other select medicines" rather than to sea water. But in any event Dr. Russel's popularity apparently inaugurated the now long reign of Brighton as the queen of watering places. The first guide book to Brighton, entitled "A Short History of Brighthelmston," was written by Dr. Anthony Relhan, who was one of the first scientifically to analyse the "bills of mortality," and who demonstrated conclusively that Brighton was then—the middle of the eighteenth century—one of the healthiest towns in England. A quarrel with the King's and Queen's College of Physicians of Dublin, about 1758, of which he was president, due to Relhan's having prescribed a "quack medicine"—to wit, James's powder—caused him to leave Ireland and settle in London, whence he came to Brighton. The use of sea water and of sea bathing in various disorders was again stimulated by a pamphlet written by Dr. Awsiter in 1768. Dr. Hollis gave some interesting details about the prevalence of rabies in this area during the latter half of the eighteenth century. It was not confined to dogs, for kine and swine, as well as both children and adults, were affected. Some curious cases of alleged "maternal impression" were cited. The usefulness of this once firmly held doctrine is demonstrated in a case in which a white woman who gave birth to a black child was enabled to dispel her spouse's misgivings by the convincing explanation that during her pregnancy she had had an overpowering longing for charcoal.

By this time surgery had advanced considerably, for trephining and abdominal operations were undertaken by the local doctors, but bleeding was there, as everywhere, the *pièce de résistance* of therapy. Several outbreaks of smallpox occurred in the latter part of the eighteenth century, either despite, or because of, the introduction of inoculation into England by Lady Mary Wortley Montagu in 1721. It was customary for doctors to receive paying patients into their houses to be "conducted through the distemper." A Ditchling surgeon advertised in the *Lewes Journal* that "he receives patients for the operation for 4 guineas ..... if they find their own wine, tea, and sugar, fee 3½ guineas." Ague was at that time endemic in certain districts of Sussex, the mudflats and lagoons at the mouths of the small tidal rivers and bournes along the coast being ideal breeding places for gnats and mosquitoes. The death-rates were very high, the proportion of burials to christenings reaching in some cases almost 2 to 1. This was largely attributable to the insanitary and poverty-stricken social conditions under which the bulk of the people lived. At the commencement of the nineteenth century Brighton became the happy hunting ground of medical charlatans. Mr. Nathan Smith, inventor, patentee, and operator of an air-pump for extracting gout—perhaps an empirical form of Bier's hyperæmia—lived in Artillery-place in 1799. Mr. Teddy Palmer, a Brighton blacksmith, relieved the Regent of a toothache at a Christmas party in four minutes by his magic fumigating process. Then, as now, the public seemed to consider it only natural for the medical profession to give their valuable services to the poor for nothing, for among other instances Dr. Bankhead's offer to attend the poor gratuitously was accepted by the Brighton churchwardens in 1803. "Even then," said Dr. Hollis, "free medical advice and attendance were no longer regarded by the laity as a charitable subvention, but rather as a legal right and a popular necessity. Since those days the purview of wealthy benevolence has not materially changed. The same exoteric estimate of the value of a doctor's work still seemingly permeates recent legislative enactments." The longevity of Sussex labourers, notwithstanding their insanitary environment and coarse food, is mentioned, as also the high death-rate among children and the fatality of infectious diseases. Coming to the nineteenth century Dr. Hollis directed his attention to the introduction of vaccination and to its enthusiastic advocate, Dr. Matthew John Tierney, who came to Brighton in 1802, became Physician in Ordinary to the Prince of Wales in 1809, was knighted about that time, and lived to be Physician in Ordinary to King George IV. and King William IV. Dr. Badcock, who confirmed Ceely's well-known experiments, was also a Brighton practitioner, while Thomas Addison and William Addison both lived there. Dr. Hollis concluded his interesting address with a reference to the late Dr. William Withers Moore, who was president of the Association at its last meeting in Brighton in 1886.

THE ANNUAL REPRESENTATIVE MEETING.

The annual meeting of the Representative Body began on Friday morning, July 18th, under the chairmanship of Mr. T. JENNER VERRALL. The Representative meeting on this occasion had among its members two medical women, Dr. Mary Bell, of Norwich, and Dr. Mina Dobbie, of Hampstead. The State Sickness Insurance Committee has already for some time past had the assistance of Dr. Constance Long and Dr. Mary Ivens; but we believe that until now no woman practitioner has belonged to the Representative Body of the Association. During the morning session, which was mainly devoted to the internal affairs of the Association, the Mayor of Hove attended for a short time and offered a welcome to the members on behalf of the corporation and citizens. Proposals for economy in reporting Representative Meetings were made by the treasurer, Dr. Edwin Rayner, and carried. With regard to the suggested formation of a new company to replace the existing constitution, the chairman of the organisation committee, Mr. F. C. Larkin, proposed that the Association should not at present proceed further with the matter, and this was agreed to. The question of the reorganisation of the Association was discussed at some length, and various schemes for the reform of the present constitution, notably that of the Metropolitan Counties Branch Council, were brought forward and debated. Proposals to reduce the size of the Representative Body were considered, but none were found acceptable. The general feeling of the members was that they should constitute a deliberative assembly and not merely a meeting of delegates tied by the instructions of their constituencies.

On Saturday the ordinary business before the meeting was twice disturbed by the introduction of "matters of urgency." The first matter arose out of an invitation which had been sent to Mr. Lloyd George and Mr. Masterman and others to attend a discussion on July 25th, in the section of medical sociology, on Hospitals in Relation to the State, the Public, and the Medical Profession. The Representative Meeting by a very large majority passed a resolution expressing its disapproval of "any action which might seem to condone the methods used by the Government in bringing the Insurance Act into operation."

The second matter was Mr. Godfrey Locker-Lampson's proposed amendment to the National Insurance Act Amending Bill. This was brought to the notice of the meeting by Dr. J. A. MACDONALD, chairman of the Council, in a brief but impressive speech. The amendment tabled in the House of Commons on July 15th by the Unionist Member for Salisbury runs as follows:—

> Where in any town or district a Approved Society proves to the satisfaction of the Commissioners that it can provide adequate medical benefit for its members and that it has made arrangements with one or more resident local medical practitioners to that end, it shall be at liberty to administer such benefit, and the provisions of the principal Act shall be varied accordingly, but so, however, that any member of such society shall be at liberty to take medical benefit as provided by the principal Act.

Dr. MACDONALD characterised this as the most dangerous move which had as yet been made against the interests of the medical profession. It was an insidious attempt to throw medical men back into the hands of the Friendly Societies, and it demanded the immediate and serious attention of the meeting. Mr. E. B. TURNER, deputy chairman of Representative Meetings, thereupon proposed a resolution of protest in an emphatic speech in which he declared that it was now evident that both political parties would sacrifice the medical profession for the sake of votes.

The motion was seconded by Mr. E. H. WILLOCK and carried unanimously in the following form:—

> That this meeting strongly protests against the amendment to the National Insurance Act, proposed by Mr. G. Locker-Lampson, having for its object the transference of the administration of medical benefit to Approved Societies, which would be a distinct breach of faith between Parliament and the medical profession, and will, in the interests of the public and the profession, offer the most strenuous opposition to this or any other attempt of the kind.

It was decided that copies of this resolution should be sent to the Prime Minister, to the leaders of the Opposition

and of the Irish and Labour Parties, to every member of the Grand Committee, and to the press agencies. Proceeding with the ordinary business the Representative Body passed resolutions indicating the necessity for amendment of the National Insurance Act in the following respects:—

1. That the proviso to Clause 2 (2) of the Amending Bill, limiting the right of persons over 65 (at the time of entering into Insurance) to medical benefit after 70 to those who had paid over 50 weekly contributions be deleted.
2. That persons holding certificates of exemption under Section 4 (4) shall be required to make their own arrangements for medical benefit.
3. To authorise a charge to the insured person for night calls.
4. That an insured person shall not be entitled to require medical attendance from any medical practitioner other than the practitioner on whose list he is, as, for instance, in respect of the administration of a general anæsthetic or assistance at an operation.
5. That an insured person shall not be entitled to medical attendance or treatment for any disease or disablement caused by his own misconduct other than venereal diseases.
6. That the term "income from all sources" shall include sums received by way of allowance, annuity, or otherwise, as, for instance, by the son of a wealthy father.
7. That representatives of the medical profession be included in the committee of the Seamen's National Insurance Society, and that the proportion shall be one-tenth.
8. That the representation of insured persons on Insurance Committees be two-fifths, in place of three-fifths.

A motion to insist on the exclusion of venereal diseases from medical benefit produced a lively debate, but, as indicated above, this was defeated.

The main topic before the Representative Body on Monday was a proposal, vigorously supported by certain members, inviting the meeting to declare itself favourable to the formation of a union, registered under the Trade Union Acts, of such medical practitioners as might desire to join together in this way for the defence of their interests. As was to be expected, this suggestion of a medical trade union, under the ægis of the British Medical Association, aroused keen opposition, although a number of members supported it with equal zeal. After both sides had been given a full hearing the debate was closured at 6 P.M., and a card vote was demanded and taken. As a result the proposal was defeated by 11,408 votes to 5259. Had the voting been taken by roll call the motion would have been rejected by a rather smaller, though sufficient, majority. The earlier part of the morning session on Monday was given up to other matters in connexion with the Insurance Act and with impending future legislation. The meeting approved an amendment to be proposed to the Amending Bill to govern the conditions under which insured persons should be allowed to make their own arrangements. The meeting then considered a report of the Council on the provision of medical attendance and treatment of persons to whom the Insurance Act does not at present apply, and a discussion took place, during which the following principles were laid down: (1) The payment for uninsured persons should be equivalent to that paid in respect of insured persons; (2) the income limit should be £104 per annum; (3) there should be free choice of doctor by patient and of patient by doctor. It was, however, recognised that the conditions existing in certain areas might render it necessary to sanction certain variations in these requirements. The meeting also expressed disapproval of setting up any contract system for attendance on midwifery cases. It was further resolved that the medical representation on District Insurance Committees ought not to be less than the proportion on County Insurance Committees.

On Tuesday the debate on the organisation of the Association was continued. Monday's rejection of the trade union proposal was endorsed by a further vote, and it was decided to set up a standing committee of the Association, to be called the Insurance Act Committee, which should replace the State Sickness Insurance Committee. With regard to the proposed special fund for the organisation and protection of the profession, it was agreed that no decisive action should be taken by the Representative Body until the scheme has been again submitted to the Divisions, and that a special Representative Meeting should be called to consider the matter. In view of the probable future extension of the scope of the National Insurance Act, the meeting resolved that it was desirable that the British Medical Association should be ready with its policy as to what a National Health Insurance Act should be, not merely from the point of view of the interests of the profession, but also from that of public health and the advancement of medical science. A proposal that in future the entire Council of the Association (except colonial members) should be elected by the Representative Body was lost. The question of finance was anxiously considered, and it was resolved that the time had arrived when the annual subscription to the Association should be raised to £2 2s. per annum for all except foreign and colonial members. The method of determining and declaring the policy of the Association upon matters of moment was discussed at some length, and resolutions were passed which will necessitate alterations in the regulations of the Association. Much business, chiefly of a formal kind, was got through before the members adjourned at 6.30 P.M. The Representative Meeting concluded on Wednesday, after a short session.

Medical News.

ANÆSTHETICS AT THE INTERNATIONAL MEDICAL CONGRESS.—An extremely interesting programme has been arranged for discussions and papers dealing with general anæsthesia, local analgesia, and spinal anæsthesia at the International Medical Congress. This will comprise such recent work as intratracheal and intravenous and colonic etherisation, anoci-association, hedonal anæsthesia, post-anæsthetic toxæmias, and many subjects which are at present prominently before anæsthetists. Many distinguished "rapporteurs" have promised to open the discussions, and the executive of the subsection are most anxious that British and Irish anæsthetists shall add their quota to the subsection's work. Patriotism as well as a desire to keep abreast of the science and art which they study and practise will no doubt prove incentives to all anæsthetists to join the Congress and help those who have been at great pains to make the subsection a success. A special museum for apparatus for producing anæsthesia is arranged, and it is hoped that all those who have apparatus whose merit or novelty is likely to prove interesting will send it for exhibition. The President is Dr. Dudley W. Buxton, 53, New Cavendish-street, London, W., and the honorary secretaries in London (Dr. Herbert Scharlieb, 49, Wimpole-street, W.) and in Edinburgh (Dr. J. W. Struthers, 2, Chester-street, Edinburgh) will supply programmes and further information.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the First Professional Examination held on July 15th–19th, the following candidates were approved in the subjects specified below:—

Chemistry an Physics.—Robert Geoffrey Addenbrooke, Birmingham University; Gerald Arthur Augustine Bradnack, Guy's Hospital; Charles Herbert Carroll, London Hospital; Nai Chena, Middlesex Hospital; John Rudolph Cox, Guy's Hospital; Allan Robert Crane, London Hospital; Gerald Hinds Duffield, King Edward VI.'s Grammar School, Stourbridge; Frederick Knowles Escritt and Wyndham Brookes Farrington, Guy's Hospital; Evelyn Hope Johnson, Manchester University; Walter Harry Maudling, Charing Cross Hospital and King's College; Kevin Richard O'Brien, London Hospital; Alfred Pain, Birkbeck College; Ronald Eric Rampling, St. Thomas's Hospital; Florence Mildred Rhodes, London School of Medicine for Women; Alan Harvey Richardson, Guy Rooker, and Henry Laurence Slaughter, St. Thomas's Hospital; Robert Masters Somerset, Sheffield University; Stuart Walter Southwood, Birkbeck College; John Alcwyn Stephens, Huddersfield Technical College; Thomas Neville Strange, Brighton Municipal Technical College; Abbass Hilmy Talaat, Middlesex Hospital; John Norman Terry, St. Thomas's Hospital; Graham McKim Thomas, Swansea Technical College; Francis Eaton Gordon Watson, St. Bartholomew's Hospital; and Dudley Francis Wilson, London Hospital.

Chemistry.—Harold Charles Clifford-Smith, Charing Cross Hospital; Horace Silva Drabble, Sheffield University; Robert Erskine-Gray, South-Western Polytechnic; Frederick Hunter Hyland, Leeds University; Mohammed Ibrahim, Middlesex Hospital; Lillian Lowenstein, London School of Medicine for Women; Ralph Kenneth Marwood, University College; Khurshedjee Jamsedjee Rustomjee, Liverpool University; and Ahmad Hussein Samy, St. Bartholomew's Hospital.

Physics.—William Blair Spence Andrew, Royal Dental Hospital; Jane Crawford, Birkbeck College; Bryan Osmond Dewes, Polytechnic Institute; Noel Edward Fasken, Guy's Hospital; Edward Francis Gillett, St. Mary's Hospital; Hussein Amin Hathout, Cairo; Christopher Hugh Macklin, Felsted School; Hugh Morris-Jones, St. Mungo's College, Glasgow; Percival Randall, University College, Cardiff; Douglas Rhys Thomas, St. Bartholomew's Hospital; Ian Murray Thomson, Guy's Hospital; and Graham Arthur Osborne White, University College, Cardiff.

Biology.—Robert Geoffrey Addenbrooke, Birmingham University; Norman John Ainsworth, Birkbeck College; Herbert Claude Apperly, South-Western Polytechnic; Harry Barlow, Liverpool University; Oswald Bastable, Leeds University; Frank Blake, St. George's Hospital and King's College; John Rudolph Cox and Francis William Crook, Guy's Hospital; Edward Francis Gillett, St. Mary's Hospital; Philip Green and Frank James

Harrington, Guy's Hospital; Mamtaz Wali Mahomed Hassanally, King's College; Austin George Hewer, Middlesex Hospital; John Reginald Houghton, Manchester University; Thomas Glyn James, University College, Cardiff; Mohamed Khalil, Cairo; Lillian Lowenstein, London School of Medicine for Women; Alfred Yaphet Massouda, King's College; Gordon Millar, St. Bartholomew's Hospital; John William Welsh Newsome, Middlesex Hospital; Alfred Pain, Birkbeck College and Middlesex Hospital; Marcel Laurence Quinlivan-Bulger, London Hospital; Percival Randall, University College, Cardiff; Florence Mildred Rhodes, London School of Medicine for Women; Khurshedjee Jamsedjee Rustomjee, Liverpool University; Henry Mearns Savery, Middlesex Hospital; John Alcwyn Stephens, Huddersfield Technical College; Phyllis Stevens, London School of Medicine for Women; Thomas Neville Strange, Brighton Municipal Technical College; Frank Hugo Stuttaford, St. Mary's Hospital; Trevor Francis Thomas, University College, Cardiff; Frederic Francis Wheeler, St. Mary's Hospital; and Graham Arthur Osborne White, University College, Cardiff.

UNIVERSITY OF SHEFFIELD.—The following are the results of examinations held recently:—

M.B., Ch.B., Final Examination.—Part B., completing examination: John E. Stacey (Honours, Class 2). Pass: John Davidson and Lionel E. Sutcliffe. Part A.: William B. Allen (with distinction in Pathology and Public Health), Gordon F. Stones (with distinction in Pathology), and Josiah R. Turner.

Second Examination for the M.B., Ch.B. Degrees.—Lydia M. Henry and Elizabeth E. Jenkins.

First Examination for the M.B., Ch.B. Degrees.—Annie Clark, Ethel M. Mathews (with distinction in Chemistry), Robert H. Rae, and Winifred H. Wells (with distinction in Chemistry).

Diploma in Public Health.—Marie Simpson and Charles S. E. Wright.

UNIVERSITY OF MANCHESTER.—At the examination for the Diploma in Public Health held recently the following candidates were successful:—

Pollok Donald, Annie C. Greenep, A. W. Laing, A. R. M. McIlraith, Marion Stocks, H. G. Trayer, A. G. Wilkinson, and G. G. Wray.

UNIVERSITY OF BRISTOL.—At examinations held recently the following candidates were successful:—

THE DEGREE OF M.D.

Reginald Samuel Sherrard Statham (honours).

FINAL EXAMINATION FOR THE DEGREES OF M.B. AND CH.B.

Part II. (completing examination).—Per Emil Christofferson.

DIPLOMA IN PUBLIC HEALTH.

Thomas Stratford Bradburn and Christopher Charles Cole Court.

Part II. (completing examination).—Percy Moxey.

Part I. only.—William Russell Cooper and John Richard Kay-Mouat.

SECOND EXAMINATION FOR THE DEGREE OF B.D.S.

William Harold Greet and Robert Hugh Turner.

PSYCHO-MEDICAL SOCIETY.—A meeting of this society will be held at the rooms of the Medical Society of London, 11, Chandos-street, London, W., on Tuesday, August 5th, at 8 P.M. Dr. C. G. Jung, of Zürich, will read a paper entitled "Psycho-analysis." Members of the medical profession are cordially invited to be present. The honorary secretary is Mr. Douglas Bryan, Spa House, Leicester.

LISTER MEMORIAL FUND.—Contributions recently made to the Lord Lister Memorial Fund include the following:—

	£	s.	d.
Lister Memorial Committee (Oxford Centre)	146	13	0
,, ,, (Cambridge Centre)	120	3	6
University of Leeds Committee	50	0	0
Corporation of Luton	3	6	6
Lahore Medical College	15	18	1
British Medical Association (S. Indian Branch)	10	0	0
,, (Transvaal Branch, Pretoria Division)	10	0	0
Philadelphia College of Physicians	21	1	3
Royal Hungarian University, Budapest	20	0	0
University of Athens	19	15	0
Accademia Medico-Fisica, Florence	4	0	0
University of Upsala, Medical Faculty	4	7	9
Asiatic Society of Japan	1	1	0
Bath Clinical Society	3	3	0
Brighton and Sussex Medico-Chirurgical Society	10	10	0
Blackburn and District Medical Society...	9	0	0
Burnley Medico-Ethical Association	2	2	0
Cardiff Medical Society (second donation)	2	9	6
Derby Medical Society	3	3	0
East Sussex Medico-Chirurgical Society...	7	0	0
Ilford Medical Society	1	7	6
Manchester Clinical Society...	10	10	0
Medical Society of London	10	10	0
Norwich Medico-Chirurgical Society	5	5	0
Oldham Medical Society	2	2	0
Sheffield Medico-Chirurgical Society	5	5	0
South-West London Medical Society	3	7	6
University College Hospital Medical Society	3	3	0
Tulane University	$20		
University of Nancy	Fr. 100		
Société Vaudoise de Médecine, Lausanne	Fr. 100		

Donations may be sent to the honorary treasurers of the Fund at the offices of the Royal Society, Burlington House, W.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON).—Demonstrations in clinical medicine will be given throughout the months of August and September, beginning on Monday, August 18th, at 2.15 P.M., in the clinical theatre at the hospital. Members of the medical profession will be admitted on presentation of their private cards, and communications may be made to Dr. William Wright, Dean of the College.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

National Insurance Act (1911) Amendment Bill.

STANDING Committee C of the House of Commons on Tuesday, July 22nd, began the consideration in detail of the National Insurance Act (1911) Amendment Bill. Mr. J. W. WILSON was in the chair.

Clause 1 lays down that there should be contributed out of moneys provided by Parliament towards the cost, expenses, and purposes of Part I. of the National Insurance Act such additional sums as Parliament might from time to time determine.

Mr. CASSEL moved an amendment to the effect that this provision of additional money should be limited to sums required for medical benefit. He did not think that the Government should have a free hand in regard to additional money for the general purposes of the Act, but should have to come to Parliament with a new Bill when this was required.

Mr. MASTERMAN (Secretary to the Treasury) resisted the amendment and said that the Government should have general powers to propose further expenditure on all heads without Parliament having the opportunity to reopen the whole of the Insurance Act.

After some discussion,

Mr. LLOYD GEORGE (Chancellor of the Exchequer) urged that there should be the same freedom to bring forward notes for national insurance as there was now for education.

The amendment was withdrawn and Clause 1 was agreed to.

Clause 2 abolishes the reduction of benefits in certain cases in regard to persons over the ages of 50 and 65.

Mr. GODFREY LOCKER-LAMPSON moved an amendment to the effect that full benefits should be paid to young persons under 21 as well as to persons over 50 as proposed. This could be given by extending the sinking fund period for additional benefits.

Mr. MASTERMAN resisted the amendment. He said that neither the Government nor the Friendly Societies wished to increase the sinking fund by one and a half years. They did not want to do anything to encourage excessive sickness claims, as would be the case if youths earning 7*s.* or 8*s.* were permitted to draw sickness benefit of 10*s.* These people were already getting a full return for their own and their employers' contributions.

Mr. BOOTH remarked that Friendly Societies were only in favour of the extension of benefits to young people if the money for this purpose was granted by Parliament.

Mr. WORTHINGTON EVANS insisted that Friendly Societies were not against the abolition of reduction of benefits in principle, but the question was, Where was the money to come from? He pointed out that the Government were now extending the sinking fund at the expense of the young men.

Mr. G. ROBERTS considered that the case for the extension of the full benefit to the old men was much more urgent than its extension to young persons under 21.

The amendment was defeated by 40 votes to 19.

Mr. GOULDING moved an amendment to omit the following provision:—

"That a person who is of the age of 65 or upwards at the time of entering into insurance shall not be entitled to medical benefit after he attains the age of 70 unless the number of weekly contributions paid by or in respect of him exceeds 50."

The saving under this provision would, he said, only be a few thousands. Was it worth while to incur all the trouble under it for so small a sum?

Mr. MACNAMARA, on behalf of the Government, declined to accept the amendment. He pointed out that full medical benefit for life would be open under it to a person who had paid one contribution. He did not think that would be fair to the societies. He was, however, prepared to accept 26 instead of 50.

The amendment was withdrawn. A proposal to substitute 26 instead of 50 was agreed to.

The Committee struck out the provision that Clause 2 should come into operation at such date not later than Jan. 14th, 1914, as the Insurance Commissioners might appoint.

Mr. MASTERMAN promised to bring up a new clause which should set out the dates at which the extra benefits under the Bill should come into operation, and it would provide that the sickness benefit should start as from Oct. 13th of this year.

Clause 2 as amended was agreed to.

Clause 3, which deals with the arrears of contributions, was under consideration when the Committee adjourned.

Standing Committee C of the House of Commons further considered the National Insurance Act (1911) Amendment Bill on Wednesday, July 23rd.

Clause 3 (arrears of contributions) was agreed to.

Clause 4 deals with the benefits of exempted persons.

Mr. MASTERMAN explained that an employed person paid nothing, but the employer paid 3*d*. a week. Those contributions were sent to a special fund apart from the funds of the Approved Societies. He was told by the actuaries that certain benefits could be given from this fund with the assistance of the State. It was now proposed in the clause to give medical and sanatorium benefits. This fund had been mainly contributed to by two classes of persons. A number of persons who began contributing to the fund had become insured persons, and they were enabled to obtain insurance at the normal rate. Two classes of persons remained. The one consisted of persons who were getting something like £26 or more from pensions, who desired medical benefit for the rest of their lives. The other class consisted of girls who were not entirely dependent on their own work because they were living at home, and often over-worked and under-paid. Medical attendance was the best benefit which could be given to these persons. Further benefits could not be given until it was known what money was at the disposal of the Insurance Commissioners under this head. He would be willing to alter the clause to provide that no benefit should be paid to persons under it until 26 contributions had been paid on their behalf.

Mr. WORTHINGTON EVANS said that many of the young men who were exempted persons would not desire medical benefit.

Mr. BOOTH: In their case it would be a benefit to the medical profession.

Mr. WORTHINGTON EVANS: The medical profession do not want to be paid for work which they do not do.

Mr. MASTERMAN said that he had no objections to a proposal that where the total income from all sources of the exempted person exceeded £160 per annum he should be required to make his own arrangements for medical attendance and treatment.

Clause 4, amended in this sense, was agreed to.

Clause 5 refers to medical benefit. Subsection 1 ran: "No voluntary contributor whose total income from all sources exceeds £160 a year shall be entitled to receive medical benefit, but in that case the weekly contribution which would otherwise be payable by him shall be reduced by one penny."

Mr. MASTERMAN said that he could not accept any amendment to the clause because the Government had promised the medical profession that the clause would at the earliest possible moment be embodied in the amending Bill. The clause was not to begin to operate until three years from now. It might be that after three years the conditions of medical service might be changed by arrangement, and this provision might accordingly never come into operation.

Sir HENRY CRAIK expressed satisfaction that the right honourable gentleman was fulfilling his pledge to the medical profession. He would support the right honourable gentleman in this matter.

Mr. H. W. FORSTER said that the clause did not touch the point whether or not there was a contract between the Societies, the Government, and the voluntary contributors to enter into an arrangement whereby in return for a voluntary payment of 7*d*. a week the contributors were to receive full benefits.

An amendment to confine the Clause to contributors becoming insured after the passing of the Act was defeated by 33 votes to 10.

The second subsection of the Clause was passed without alteration the Chairman ruling out of order many amendments that may come up later for consideration.

Medical Treatment and Inspection of School Children.

Mr. J. A. PEASE, in introducing the Education Bill on Tuesday, July 22nd, outlined a grant of £50,000 for the medical treatment and inspection of school children. He indicated that it was intended to treat these two services more as one in the future.

London University.

It is currently reported in the Lobby of the House of Commons that the Government contemplates bringing forward legislation in the next session of Parliament to carry into effect certain recommendations of the Royal Commission on Universit Education in London.

Highlands and Islands Medical Service.

The necessary preliminary financial resolution having been passed by the House of Commons, Mr. MCKINNON WOOD, the Secretary for Scotland, has introduced the Highlands and Islands (Medical Service) Bill. It has received a first reading.

The Select Committee on Patent Medicines.

Since it concluded taking evidence the Select Committee of the House of Commons on the advertisement and sale of patent medicines has been engaged in the consideration of its report. It is understood that that report, as it has been drafted by Sir HENRY NORMAN, the chairman, in consultation with the members of the committee, is now practically ready for formal adoption. Its terms will probably be made public before the rising of Parliament in the middle of August. Of course, until it is officially presented to the House, the precise recommendations of the Committee will not be known. However, it may be mentioned that the expectation prevails amongst members who are in close touch with the subject that some of the recommendations will be far-reaching. For instance, it is quite anticipated that the Committee will recommend the creation of a new body for the administration of the regulations affecting the sale and advertising of patent and proprietary medicinal preparations, under the control of one of the Departments of State. The public inquiry brought out the fact that several Government Departments have at present duties bearing on the subject of patent medicines, and a central control was urged by not a few witnesses. Another recommendation of the Committee will almost certainly deal with the prohibition of advertisements of cures for cancer and consumption and diseases of an incurable character. The weight of evidence alone seemed to point to such a prohibition, and also to the drastic suppression of advertisements of "quack" remedies for females ailments and veneral diseases. One of the crucial points in the inquiry related to the publication of the formula of a proprietary remedy on the label. It is not expected that the Committee will go the length of requiring this disclosure in so public a form, but it is believed that the report will indicate that the Committee as a whole is not indisposed to entertain the idea that this information may well be communicated to the central authority. This outline of the probable terms of the report only represents the expectations in well-informed quarters.

Bills Abandoned.

The Government do not intend to proceed further this Session with the Milk and Dairies Bill, the Milk and Dairies (Scotland) Bill, and the Inebriates Bill. Mr. ASQUITH has announced that they may possibly also have to drop the Elementary Education (Epileptic and Defective Children) Bill.

HOUSE OF COMMONS.

WEDNESDAY, JULY 16TH.

Discharged Sanatorium Patients.

Mr. C. BATHURST asked the President of the Local Government Board whether he was aware that, in several of the first annual reports of the county tuberculosis officers lately issued, attention was drawn to the evil effects both to tuberculous patients and members of their families of the neglect of such patients after their discharge from a sanatorium; and whether, seeing that there was admittedly in these cases a gap for which the National Insurance Act made no provision, and which might result in physical recidivism as well as additional expenditure on the part of County Insurance Committees, the Government proposed either in the National Insurance Act (1911) Amendment Bill, now before the House, or through the Board's administration to remedy this defect.—Mr. BURNS answered: The reports which have been at present received by the Local Government Board make no special reference to the point, but the value of after-care of patients who have received treatment in sanatoria is generally well recognised, and in the view of the department it should form an important part of the work of the dispensaries, which are now being established. I have brought this view to the notice of local authorities.

Vaccination with One Mark.

Mr. GEORGE ROBERTS asked the President of the Local Government Board whether he was aware that in the United States it was usual to perform vaccination with one mark only; and whether, in view of the fact that the official statistics showed that the mortality from small-pox, as well as the case-fatality rate, had been much lower in the United States than in this country during recent years, he was prepared to consider the desirability of permitting one-mark vaccination by public vaccinators under his jurisdiction.—Mr. BURNS replied: I am not aware that in the United States it is usual to perform vaccination with one mark only, nor does my information enable me to confirm the statement contained in the second part of the question. Having regard to the finding of the Royal Commission on Vaccination in regard to this point, I do not propose to alter the present practice.

The Payment of Maternity Benefit.

Mr. GLAZEBROOK asked the Secretary to the Treasury whether he would provide, by means of the amending Bill to the National Insurance Act, that maternity benefit should be paid to the woman herself and be her property; that the clause in the National Insurance Act dealing with the prescribed fee of the doctor called in under the Midwives Act be struck out of the Act; and that it should be compulsory for Approved Societies to pay sick benefit for four weeks in maternity cases of employed married women.—Mr. MASTERMAN wrote in reply: Amendments to the effect suggested by the honourable member have already been put down and will be duly considered in committee.

Territorial Field Ambulances.

Mr. COURTHOPE asked the Secretary of State for War what was the number of field ambulances authorised to be maintained on the establishment of the Territorial Force; how many of such units were complete and effective; and what was the total strength, established and effective, respectively, of these field ambulances.—Colonel SEELY furnished the following written reply: There are 56 field ambulances. The establishment amounts to 504 officers and 12,447 non-commissioned officers and men, and the strength to 408 officers and 10,456 non-commissioned officers and men.

THURSDAY, JULY 17TH.

Peamount Sanatorium.

Sir JOHN LONSDALE asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been directed to the authorised statement made by the Countess of Aberdeen at the meeting of the

managing committee of the Peamount Sanatorium on June 27th that the ideal senior medical superintendent of Peamount Sanatorium should be an Irishman and a Catholic; whether his attention had been directed to the statement of the chairman of the South Tipperary county council that the Women's National Health Association had decided that no candidates for the post would be considered except they were Irishmen and Roman Catholics; and whether he would take steps to prevent the Peamount Sanatorium being conducted on sectarian lines.—Mr. BIRRELL replied: My attention has been called to the speech and statement referred to. I am quite sure that this institution will not be conducted on sectarian lines, and that all denominations will receive equal treatment. Chaplains of the three principal denominations in Ireland have been appointed, and a Protestant as well as a Catholic chapel has been erected in the premises. When a managing committee of an institution like Peamount are considering the appointment of a resident medical superintendent it is not unreasonable to take into consideration the religious belief of the great majority of the patients.

Sir JOHN LONSDALE asked the right honourable gentleman whether the committee of management of the Peamount Sanatorium, by a majority consisting of representatives of county councils, appointed Dr. McGrath to the position of medical superintendent, subject to the approval of the Local Government Board; whether the Local Government Board withheld their approval; and upon whose representations and upon what grounds was the appointment overruled.—Mr. BIRRELL answered: The approval of the appointment of resident medical superintendent of the Peamount Sanatorium by the Local Government Board is not necessary, but unless the Board is satisfied that the person so appointed is in every respect suitable it will be the duty of the Board to withhold its sanction to the admission of patients to the sanatorium. Dr. McGrath was selected for the post of resident medical superintendent by a majority of the managing committee of the institution, which included certain representatives of county councils which had taken beds in the sanatorium as well as members of the Women's National Health Association. It was pointed out, however, that Dr. McGrath, while possessing the requisite medical qualifications, had not had the experience in the management of a sanatorium, and the Local Government Board have therefore intimated to the Women's National Health Association that unless the Board were satisfied that the resident medical superintendent was a suitable person in every respect the Board would be obliged to consider the propriety of withholding their approval to further admissions to the institution.

Mr. O'SHAUGHNESSY: Is it not the fact that Dr. McGrath possessed the necessary qualifications to entitle him to be appointed to this position; and if that is so, how is it that his appointment cannot be sanctioned after he was elected by a large majority?—Mr. BIRRELL: It is quite true that Dr. McGrath possesses the necessary medical qualifications, but one of the conditions of the appointment was that the person to be appointed head of the institution should have some prior experience of the management of sanatorium institutions. Inasmuch as he had not, that is where difficulty has arisen. It is not simply a question of medical qualifications.

Ireland and the Finance of Medical Benefits.

Mr. GINNELL asked the Secretary to the Treasury whether he would state the amount of the additional contribution of 2*s.* 6*d.* per insured person from the Exchequer of the United Kingdom towards the better working of the Insurance Act in Great Britain, in pursuance of the arrangement made last October; assuming the previous arrangements to have been fair as between Great Britain and Ireland, what would have been an equivalent increase of expenditure in Ireland towards the better working of the Act there; what increase had been made in Ireland; whether the increased expenditure in Great Britain depended on local provision being made for insurance purposes; would he state the grounds for not allocating the full equivalent to Ireland; why the deficiency has to be made up out of the rates there; whether he could state the total amount so provided in Ireland; and whether any complaints of this arrangement had reached him.—Mr. MASTERMAN replied: The estimated cost of the grant of 2*s.* 6*d.* per insured person in Great Britain to provide for the excess cost of medical attendance and treatment over the original estimate for the calendar year 1913 is £1,615,000. A grant of 2*s.* 6*d.* per insured person in Ireland would on the basis of the returns to March 31st, 1913, amount to £87,390. There is no medical benefit under the Insurance Act in Ireland, but a special grant of £250,000 has been voted for grants in Ireland towards the cost of medical certificates of sickness and other expenses arising owing to the absence of such medical benefit. There would, therefore, upon the honourable Member's theory of equivalent grants, which, however, I must not be understood as accepting, remain due to Ireland a further sum of £37,390. It must be remembered, however, that the main reason for the non-existence of medical benefit to Ireland was the existence in Ireland and the non-existence in Great Britain of a public medical service towards the cost of which the taxpayers of the United Kingdom contribute some £55,000—a grant in respect of which the taxpayers of Great Britain receive no equivalent. Unless, therefore, the honourable Member is prepared to contend that where a service in Ireland is carried out in a different manner from the corresponding service in Great Britain, the taxpayers of the United Kingdom should not only bear a full proportion of the cost of the Irish service, but also contribute to general Irish purposes a sum equal to what would be the cost of duplicating the Irish service upon the lines adopted in Great Britain, it is obvious that the account shows a balance of approximately £18,000 in favour of Ireland.

Sickness Certificates in Ireland.

Mr. PATRICK WHITE asked the Secretary to the Treasury whether there was any objection to a medical officer of a dispensary district in Ireland issuing a certificate under the National Insurance Act to a sick person upon whom he was in attendance and taking a fee for doing so; and whether the dispensary midwife might act in the same manner as the medical officer.—Mr. MASTERMAN answered: The certificate required by an insured person for claiming sickness benefit may be issued to him by the medical officer of a dispensary district in Ireland at a charge agreed upon between the patient and the doctor; the certificate required by an insured woman or the wife of an insured person to support a claim for maternity benefit may be given by a dispensary midwife in attendance on the case.

Medical Benefit and Temporary Residence.

Sir RANDOLF BAKER asked the Secretary to the Treasury whether the possession of a green transfer voucher ensured an insured person receiving medical treatment at a temporary place of residence, or whether doctors on the panel were entitled to refuse to give medical benefit except for additional payment to persons holding such vouchers?—Mr. MASTERMAN answered: An insured person who has obtained a green voucher is entitled without additional payment to receive medical attendance from a doctor on the panel in the temporary place of residence specified in the voucher.

The Site for London University.

Mr. KING asked the Prime Minister whether he could give an assurance that no site would be acquired for the University of London unless and until the approval of the House of Commons was signified on the proposal.—Mr. ASQUITH replied: I am not in a position to give the assurance asked for, since the Government has no present intention of making a grant towards the acquisition of a new site for the University.

Certification of Deaths from Alcoholism and Venereal Disease.

Mr. WILLIAM THORNE asked the President of the Local Government Board whether his attention had been directed to allegations that in such matters as alcoholism, venereal disease, and abortion, the Registrar-General's statistics as to the causes of death were quite unreliable; whether he had any official information showing the accuracy of these allegations; and, if so, whether he proposed to take any steps to ensure greater accuracy of certification.—Mr. BURNS (in a written answer) replied: I do not find that I have received any representations on this subject, but I am aware that allegations of the kind referred to have been made. I will confer with the Registrar-General as to whether any steps can be taken in the direction indicated.

Sewage Disposal and Public Health.

Mr. BENNETT-GOLDNEY asked the President of the Local Government Board: (1) Whether the Board possessed any jurisdiction over local authorities with regard to the disposal of sewage; and, if so, whether the Board had any knowledge of any local authorities in England which permitted of the discharge of crude sewage into the sea or estuary of the sea in closer proximity to any sands or beaches used by the public for bathing or paddling or recreation than 60 yards from low-water line at spring tides; (2) whether the Board issued any regulations for the guidance of English local authorities with regard to the disposal of crude sewage; whether the Board was aware of any local authority which permitted of the discharge of crude sewage into the sea or estuary of the sea in closer proximity to any inhabited dwellings than 60 yards from low-water line at spring tides; if so, would he say whether any such authorities were authorised by the Board to permit of the flow of crude sewage into the sea during rising tides or when the currents habitually set inshore; and (3) whether he would ascertain whether any of the authorities of any English seaside health resorts of more than 20,000 inhabitants, or of any smaller health resorts of more than 3000 inhabitants, adjoining a larger one of more than 12,000, at the present time permitted of the discharge of crude sewage into the sea or estuary of the sea from an outlet which was either uncovered at low tide, at spring tides, or which, if slightly submerged, was nearer to the sands or beaches habitually used by the public for bathing and recreation than 50 yards at low tide; and whether, if on inquiry any such outlets were found to be in use for the discharge of crude sewage, he would, in the interest of the public health and decency, communicate with the authority or authorities concerned with a view to their making provision at once to remedy such abuses in all populous resorts, so that no discharge of crude sewage should be permitted at those places at a less distance from low-water mark at low tide than 60 yards, or at a less depth than 4 feet below low-water mark at the lowest tides.—Mr. BURNS wrote in reply: The jurisdiction of the Local Government Board in regard to the disposal of sewage by local authorities consists in their power to sanction or withhold sanction to loans. I am aware that there are cases in which the discharge of crude sewage takes place into the sea in the circumstances referred to in the questions. The Board do not issue any general regulations with regard to the disposal of sewage. The matter is one which has to be governed by all the circumstances of the particular case, upon which the advice of an engineer having extensive experience of sewage disposal in tidal waters should always be sought. If the honourable Member will be so good as to furnish me with the names of the authorities he has in mind, I shall be glad to communicate with them.

MONDAY, JULY 21ST.

Exemptions from Vaccination.

Mr. RAMSAY MACDONALD asked the President of the Local Government Board whether he would state the total number of exemption certificates or declarations of conscientious objection to vaccination received by vaccination officers during the calendar years 1907–12, inclusive; and the percentage of such objections to total births during those years.—Mr. BURNS wrote in reply: The figures are as follows, viz.:—

Year.	Exemptions.	Percentage of total births registered.
1907	57,675	6·3
1908	162,799	17·3
1909	190,689	20·9
1910	230,947	25·7
1911	248,483	28·2
1912	275,929	31·6

TUESDAY, JULY 22ND.

Sanatorium Accommodation in the Metropolis.

Replying to Mr. ASTOR, Mr. BURNS said: The institutions belonging to the Metropolitan Asylums Board which are at present used for the purpose of sanatorium benefit are the Downs Sanatorium at Sutton and a part of the Northern Hospital, Winchmore Hill. The former has 372 beds, of which 296 were in use yesterday, and the latter has 200, of which 171 were then occupied. The area of the site of the Downs Sanatorium, excluding that covered by buildings, is 17¼ acres. At Winchmore Hill the airing courts and exercise fields at present available for the patients amount to 8¾ acres, but there are nearly 36 acres attached to the whole hospital.

Complaints Against Practitioners under the Insurance Act.

Mr. FRED HALL (Dulwich) asked the Secretary to the Treasury to state the estimated annual cost of the arrangements recently made for hearing complaints against medical practitioners under the National

Insurance Act; how the expenditure would be borne; whether such complaints would be made direct to the Insurance Commissioners by the insured person or through the Insurance Committees; whether the names of the persons to form the committees of inquiry had yet been decided upon; and, if so, whether he would submit a list of them.—Mr. WEDGWOOD BENN (on behalf of Mr. MASTERMAN) replied: The cost of the arrangements referred to will be provided for in the votes of the separate Commissions, under the head of "special enquiries and services," for which estimates amounting to £5250 for the four Commissions have been laid before Parliament. If any representations are made to the Commissioners by an Insurance Committee or a Local Medical Committee that the continuance of a practitioner on the panel would be prejudicial to the efficiency of the medical service of insured persons the Commissioners must, and if any similar representations are made by any other body or any persons they may, hold an inquiry. The Inquiry Committee will not, as a rule, investigate complaints made by insured persons until such complaints have been investigated by the Medical Service Subcommittee of the Insurance Committee. For the purpose of each inquiry an inquiry committee, composed of two practitioners and one barrister or solicitor in actual practice, is constituted by the Commissioners. The English Commissioners have appointed Mr. J. Fischer Williams, Dr. H. W. Langley Browne, and Dr. C. H. Milburn to act as the first inquiry committee.

Final Lists of Insured Persons.

Mr. FRED HALL (Dulwich) asked the Secretary to the Treasury how many doctors had been placed upon the panels of medical men under the National Insurance Act in England, and how many of them had been furnished with a register of insured persons for whom they were responsible in order that they might check applicants for medical treatment.—Mr. WEDGWOOD BENN (for Mr. MASTERMAN) answered: The number of medical practitioners on the different panels is about 18,000. I am unable at present to say how many of these doctors have received final lists of the insured persons for whose treatment they will be responsible. Such final lists cannot be supplied until the process of allocation of insured persons who have not chosen their doctor has been completed. In the meantime the doctors have no difficulty in checking applications for treatment from insured persons who have already been accepted by them.

Compulsory Isolation of Tuberculous Cases.

Mr. ASTOR asked the President of the Local Government Board whether any local authorities, and, if so, which, had taken steps to secure the compulsory isolation of tuberculous cases which were in a state of high infectivity; and, if so, whether he would state what action had been taken.—Mr. BURNS wrote in reply: In the session of 1911 the corporation of St. Helens obtained by means of a local Act certain special powers in regard to the compulsory isolation of persons suffering from pulmonary tuberculosis. Similar powers were refused in the case of Sheffield in the session of 1912 and in the cases of Derby and Southport in the present session. Similar powers have been obtained in the present session by Liverpool, East Ham, and Bradford. The medical officer of health of St. Helens considers that the powers have proved useful, but he reports that during 1912 in only one case was it necessary to make an application to the court for an order authorising compulsory removal.

WEDNESDAY, JULY 23RD.

The Medical Profession and Malingering.

Sir HENRY CRAIK asked the Secretary to the Treasury whether he could specify the Manchester Committee which brought a charge against the medical profession in Lancashire of encouraging malingering; whether he was aware that the Manchester Medical Insurance Committee repudiated the charge; and whether he would state upon what evidence the charge was founded.—Mr. WEDGWOOD BENN (on behalf of Mr. MASTERMAN) answered: My right honourable friend did not refer to the Manchester Local Medical Committee, nor did he say that any Manchester Committee had made a charge against the medical profession in Lancashire of encouraging malingering. He was informed that the doctors on the Manchester Insurance Committee had themselves proposed that a committee consisting of an equal number of themselves and of representatives of insured persons should discuss any complaints on this subject, and he said that if the honourable Member would consult that Committee he should be very glad to hear the result. With regard to the last part of the question, he could only repeat that a disproportionate number of complaints had been received from societies with branches in Lancashire. My right honourable friend may add as an example that in an investigation made by one Approved Society as to the number of districts in which doctors appear to be giving certificates where the member is not really incapacitated, while Scotland is 5 per cent. and South-East England 5 per cent., East Lancashire rises to 57 per cent. and West Lancashire to 55 per cent. The whole subject will form a matter of inquiry before the Departmental Committee to be appointed.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, London.

A System of Veterinary Medicine. By Various Writers. Edited by E. Wallis Hoare, F.R.C.V.S., Lecturer in Veterinary Hygiene, University College, Cork; late Examiner in Anatomy, Royal College of Veterinary Surgeons. Vol. I., Microbial Diseases. Price 21*s*. (Complete in 2 volumes, price 42*s*.)

FORSTER GROOM AND CO., LIMITED, 15, Charing Cross, London, S.W.

Hints for Regimental Medical Officers of the Territorial Force. By Captain M. F. Grant, R.A.M.C., Adjutant, R.A.M.C. School of Instruction, 1st London Division, T.F. Price 1*s*. 6*d*.

HERDER, B., 68, Great Russell-street, London, W.C.

Quaestiones Theologiae Medico-Pastoralis. Vol. II. Augustinus Gemelli, O.M., Doctor Medicinae et Chirurgiae, Professor ad. honorarius Hystologiae, Lector Medicinae Pastoralis. De Scrupulis Psychopathologiae Specimen in Usum Confessariorum. Editio prima quam ex Italico Latinum Sermonem vertit doct. Cæsar Badii in Seminario Faesulano professor. Price, paper, 4*s*. 3*d*. net; cloth, 5*s*. 6*d*. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

ADDISON, KATE, M.B., B.S. Lond., has been appointed Clinical Assistant to the Skin Department at the Royal Free Hospital.

BOYERS, HEDLEY, has been appointed Assistant House Surgeon at the West Bromwich and District Hospital.

CATES, JOSEPH, M.D. Lond., D.P.H. Cantab., has been appointed Medical Officer of Health of the County Borough of St. Helens.

GEDDES, A. CAMPBELL, M.B., B.S. Edin., has been appointed to the Robert Reford Chair of Anatomy at McGill University.

HUNT, MATILDA, M.D. Lond., has been appointed Clinical Assistant and Assistant to the Gynæcological Department at the Royal Free Hospital.

KANN, Miss A. L., M.B., B.S. Lond., has been appointed Anæsthetist to the New Hospital for Women, and Clinical Assistant and Assistant to the Throat, Nose, and Ear Department at the Royal Free Hospital.

MANDRANA, K. C., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at the Italian Hospital.

MOSS, HELEN I., M.B., B.S. Lond., has been appointed Assistant Anæsthetist to the Royal Free Hospital.

PERNET, GEORGE, M.D. Paris, M.R.C.S., L.R.C.P. Lond., has been reappointed Dermatologist to the West London Hospital and Lecturer on Dermatology to the West London Post-graduate College.

RADCLIFFE, FRANK, M.D. Vict., has been appointed Honorary Acting Surgeon to the Oldham Royal Infirmary.

RICHARDSON, A., M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Surgical Tutor in connexion with the Medical School at the University of Leeds and Surgical Registrar to the General Infirmary.

THOMPSON, CHARLES J., L.M.S.S.A. Lond., has been reappointed Clinical and Surgical Assistant to the Birmingham and Midland Hospital for Skin and Urinary Diseases.

VENABLES-WILLIAMS, W. M., L.R.C.P. & S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Colwyn Bay District of the county of Carnarvon.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £100 per annum, with board and residence.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Resident Medical Officer and Junior Resident Medical Officer, both for six months. Salary at rate of £60 and £40 per annum respectively, with board, residence, &c.

BENENDEN NATIONAL SANATORIUM, Kent.—Assistant Medical Officer. Salary £120 per annum, with board, residence, and laundry.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with board and laundry.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Third House Surgeon. Salary £80 per annum, with residence and board.

BIRMINGHAM UNION, SELLY OAK INFIRMARY.—Resident Assistant Medical Officer. Salary £160 per annum.

BOOTLE BOROUGH HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with board, residence, and laundry. Also Clinical Assistant. Salary £50 per annum.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Junior Resident Officer. Salary £80 per annum, with board, rooms, and attendance.

BRISTOL ROYAL INFIRMARY.—House Physician. Salary at rate of £100 per annum, with apartments, board, and laundry.

BURNLEY, VICTORIA HOSPITAL.—Second House Surgeon for six months. Salary at rate of £80 per annum, with residence, board, and washing.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—House Surgeon and Second House Surgeon, each for six months. Salary in each case £80 per annum, with board, residence, and laundry.

CANCER HOSPITAL, Fulham-road, S.W.—First Assistant to Research Department. Salary £350 per annum.

CANTERBURY MENTAL HOSPITAL, Canterbury.—Assistant Medical Officer, unmarried. Salary £160 per annum, with board, lodging, washing, and attendance.

CARLISLE DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd-street, W.C.—Bacteriologist. Salary £50 per annum.

CHESTER GENERAL INFIRMARY.—House Physician. Salary £90 per annum, with residence and maintenance.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £90 per annum, with board, apartments, and laundry.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Two House Physicians for six months. Salary at rate of £75 per annum, with board, residence, and washing.

COBHAM, SCHIFF HOME OF RECOVERY.—Resident Surgical Officer for six months. Salary £100 for the six months, with board, lodging, and washing.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Physician. Salary £80 per annum, with board, residence, and washing.

COVENTRY AND WARWICKSHIRE HOSPITAL, Coventry.—Senior House Surgeon, House Physician, and Junior House Surgeon. Salary of former £120 per annum, and of two latter £90 per annum each, with residence, board, laundry, and attendance.

CROYDON GENERAL HOSPITAL.—Junior House Surgeon for six months. Salary £80 per annum, with board, laundry, and residence.

DENBIGH, DENBIGHSHIRE INFIRMARY.—House Surgeon. Salary £110 per annum, with board, residence, and washing.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon, unmarried. Salary at rate of £75 per annum, with board and laundry.

DEWSBURY AND DISTRICT GENERAL INFIRMARY.—House Surgeon. Salary £120 per annum, with board, residence, and laundry.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £65 per annum, with board and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Assistant Surgeon to Out-patients.

ECCLES AND PATRICROFT HOSPITAL.—House Surgeon, unmarried. Salary £70 per annum, with board, washing, and lodging.

ENNISKILLEN, FERMANAGH COUNTY HOSPITAL.—House Surgeon. Salary £72 per annum.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of 100 guineas per annum, with board, apartments, and washing.

FOLKESTONE, ROYAL VICTORIA HOSPITAL.—House Surgeon. Salary £100 per annum, with apartments, board, and laundry.

GATESHEAD DISPENSARY.—Assistant Medical Officer. Salary £200 per annum.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Physician on the Acting Medical Staff. Also Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

GRIMSBY AND DISTRICT HOSPITAL.—Senior House Surgeon. Salary £100 per annum. Also Junior House Surgeon. Salary £80 per annum, with board, lodging, attendance, and washing.

HALIFAX ROYAL INFIRMARY.—Second House Surgeon, unmarried. Salary £100 per annum, with residence, board, and washing.

HARROGATE, HEATHERDENE CONVALESCENT HOME. — Honorary Surgeon.

HASTINGS, EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary at rate of £70 per annum, with residence, board, and washing.

HITCHIN, THREE COUNTIES ASYLUM.—Junior Assistant Medical Officer. Salary £200 per annum, with board, apartments, washing, and attendance.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton. —Assistant Resident Medical Officer. Salary £100 per annum, with board and residence. Also House Physician for six months. Salary 30 guineas.

KENSINGTON DISPENSARY AND CHILDREN'S HOSPITAL.—Vacancy on Honorary Medical Staff. Also Locum Tenens for two months. Salary 4 guineas a week, with board, apartments, laundry, &c.

KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum and board.

LANARK, COUNTY OF, DISTRICT OF THE UPPER WARD.—Tuberculosis Officer and Assistant Medical Officer of Health. Salary £300 per annum.

LANCASHIRE EDUCATION COMMITTEE.—School Medical Inspector. Salary £250 per annum.

LANCASTER, BOROUGH OF.—Medical Officer of Health. Salary £400 per annum.

LEEDS GENERAL INFIRMARY.—Resident Medical Officer at Ida and Robert Arthington Hospitals. Salary £60 per annum, with board, residence, and laundry. Ophthalmic House Surgeon. Salary £50 per annum, with board, residence, and laundry. Two House Physicians without salary, but with board, residence, and laundry.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.

LEICESTER POOR-LAW INFIRMARY.—Second Resident Assistant Medical Officer. Salary £130 per annum, with rations, apartments, and washing.

LIVERPOOL, TOWNSHIP OF TOXTETH PARK WORKHOUSE AND INFIRMARY.—Assistant Resident Medical Officer. Salary £125 per annum, with board, washing, and apartments.

LIVERPOOL WORKHOUSE HOSPITAL, Brownlow Hill.—Resident Assistant Medical Officer. Salary £100 per annum, with extra £20 for examining applicants for outdoor relief, with separate apartments and usual residential allowances.

LONDON FEVER HOSPITAL, Liverpool-road, N.—Assistant Resident Medical Officer. Salary £150 per annum, with residence and board.

LONDON HOSPITAL MEDICAL COLLEGE.—Demonstrator of Pharmacology. Salary £200 per annum.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Physician for Diseases of the Skin. Also Ear, Nose, and Throat Surgeon. Also Surgeon to Out-patients. Also Surgical Registrar. Salary at rate of 40 guineas per annum.

LOWESTOFT HOSPITAL.—House Surgeon, unmarried. Salary at rate of £100 per annum, with board, residence, and laundry.

MAIDSTONE, KENT COUNTY ASYLUM.—Fourth Assistant Medical Officer, unmarried. Salary £200 per annum, with quarters, attendance, washing, &c.

MANCHESTER, HULME DISPENSARY, Dale-street, Stretford-road.—House Surgeon. Salary £160 per annum, with apartments, attendance, &c.

MANCHESTER WORKHOUSE, Crumpsall.—Junior Resident Assistant Medical Officer, unmarried. Salary £110 per annum, with rations, apartments, washing, attendance, &c.

MERTHYR TYDFIL UNION WORKHOUSE AND PONTSARN SANATORIUM.—Assistant Medical Officer. Salary £150 per annum, with apartments, rations, laundry, and attendance.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Resident Medical Officer. Salary £150 per annum, with board, attendance, and laundry.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Northwood.—House Physician. Salary £75 per annum, with board, residence, and washing.

NEWARK-UPON-TRENT HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and laundry.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Resident Medical Officer. Salary at rate of £100 per annum, with board, residence, and laundry.

OLDHAM, COUNTY BOROUGH OF.—Assistant Medical Officer of Health. Salary £260 per annum.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Casualty House Surgeon, unmarried, for six months. Salary at rate of £80 per annum, with board, &c.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, residence, and washing.

PRESTON ROYAL INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road.—House Physician for six months. Salary at rate of £80 per annum, with board, residence, and washing.

ROYAL EYE HOSPITAL, Southwark, S.E.—Junior House Surgeon for six months. Salary £50 per annum, with board and residence. Also Clinical Assistants.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—House Physician for six months. Salary at rate of £60 per annum, with board, lodging, and washing.

ROYAL NATIONAL MISSION TO DEEP SEA FISHERMEN.—Medical Men for service at Sea. Salary 4 guineas per week, with board and travelling expenses.

ROYAL NAVAL MEDICAL SERVICE.—Twenty-five appointments.

RYDE, ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House Surgeon, unmarried. Salary £125 per annum.

ST. ALBANS, HERTS COUNTY ASYLUM, Hill End.—Second Assistant Medical Officer, unmarried. Salary £200 per annum, with board, lodging, and washing.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £80 per annum, with board, residence, and laundry.

SALISBURY GENERAL INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, and lodging.

SHEFFIELD, JESSOP HOSPITAL FOR WOMEN.—Senior and Assistant House Surgeons, unmarried. Salary £100 and £80 per annum respectively, with board, residence, and laundry.

SHEFFIELD ROYAL INFIRMARY.—Two Resident Medical Officers. Salary £70 per annum, with board and residence.

SHOREDITCH INFIRMARY, Hoxton-street, N.—Junior Assistant Medical Officer. Salary £150 per annum, with board, apartments, and washing.

SHREWSBURY, SALOP INFIRMARY.—House Surgeon. Salary £150 per annum, with board, washing, and residence.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Surgeon for six months. Salary at rate of £100 per annum, with rooms, board, and washing.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £90 per annum, with residence, board, and washing.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—House Surgeon. Salary £100 per annum, with apartments, board, and washing.

SUNDERLAND ROYAL INFIRMARY.—House Physician and Two Junior House Surgeons. Salary £90 per annum in each case, with board, residence, and laundry. Also Senior Resident. Salary £150 per annum, with board and apartments.

SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and attendance.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

UNITED PROVINCES DUFFERIN FUND ASSOCIATION.—Medical Woman for one of the large Dufferin Hospitals of the United Provinces. Salary Rs. 300 per mensem, with house.

VIRGINIA WATER, SURREY, HOLLOWAY SANATORIUM HOSPITAL FOR THE INSANE.—Junior Assistant Medical Officer. Salary £200 per annum, with board, lodging, laundry, and attendance.

WARWICKSHIRE COUNTY COUNCIL.—Assistant County Medical Officer of Health. Salary £250 per annum.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Senior House Surgeon and Senior House Physician. Salary at rate of £100 per annum in each case. Also Junior House Physician. Salary at rate of £75 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon. Salary £125 per annum, with board, rooms, and laundry.

WORCESTER GENERAL INFIRMARY.—House Physician. Salary £120 per annum, with board, residence, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Chipping Norton, in the county of Oxford; and at Beith, in the county of Ayr.

Births, Marriages, and Deaths.

BIRTHS.

CANE.—On July 19th, at Kirkee, near Poona, India, the wife of Captain Arthur S. Cane, R.A.M.C., of a son.

HUNT.—On July 18th, at 3, Goldsmid-road, Brighton, the wife of Ernest Rivaz Hunt, M.A., M.D. Cantab., of a son.

KIDSTON.—On July 17th, at 7, Croxteth-road, Sefton Park, Liverpool, the wife of Dr. Noel Wallace Kidston, of a son.

MARRIAGES.

CHEADLE—REYNOLDS.—On July 17th, at St. Mary Abbot's, Kensington, Bernard Arthur Cheadle, M.B., B.S. Lond., of Salisbury, Rhodesia, to Edith Frances, widow of Claude Reynolds, late of Bulawayo, Rhodesia.

DOWNER—BEEBE.—On July 17th, at Christ Church, Westminster, Reginald Lionel Ernest Downer, M.D. Lond., to Daphne Marguerite, second daughter of Mr. and Mrs. A. Hatton Beebe, of Elvaston, Woking.

DEATHS.

GOTCH.—On July 15th, at St. Mary Abbot's-terrace, Kensington, two days after his 60th birthday, Francis Gotch, M.A., D.Sc., F.R.S., Waynflete Professor of Physiology in the University of Oxford.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HEALTH AND HOSPITALS IN CEYLON.

A REPORT on the Ceylon Blue-book of 1911–12 has only now (July) been presented to Parliament through the Colonial Office. Although it gives financial, educational, and railway details up to June 30th, 1912, all the other statistics, including those relating to health and medical matters, deal only with the calendar year 1911. The population on Dec. 31st of that year was estimated at 4,106,254, including 7684 Europeans. The births registered numbered 156,398, being in the proportion of 37·9 per 1000 of the population estimated at the middle of the year. The deaths numbered 143,380, and were equal to a rate of 34·8 per 1000—the second highest rate on record for the last 45 years, the highest (35·1) being in 1906. Compared with the average rates for the 11 years 1898–1908, the birth-rate of 1911 showed a decrease of 0·1 and the death-rate an increase of 6·3 per 1000. The general health of the population during the year was bad. Deaths from enteric fever showed a marked decrease from the previous year, numbering only 651, as against 4619, but this is almost entirely due to an alteration in the method of tabulation, only those cases being now entered as "enteric fever" which are duly certified as such by qualified medical men, while deaths previously reported by village registrars as due to this cause are now classified as due to "ill-defined fever." Under the latter head the number of deaths increased from 16,238 in 1910 to 33,064 in 1911. Deaths registered as due to diarrhœa rose from 13,602 in 1910 to 17,347 in 1911, to dysentery from 2960 to 4743, to phthisis from 3917 to 4286, and to ankylostomiasis from 1592 to 2001. Cholera accounted for 277 deaths, as against 22 in 1910, 242 of these occurring in the coolie camp at Ragama, and being traceable to infection from India. Deaths from small-pox, also traced to infection from India, numbered 89, as against 29 in 1910. There were 38 deaths from hydrophobia. The Ceylon Government gives an annual grant to the Pasteur Institute at Coonoor, and poor persons bitten by rabid animals and unable to meet the expenses of the journey are sent there at the cost of the Government. Concerted action is being taken by the local authorities to stamp out rabies by enforcing the registration of dogs and by the destruction of homeless pariahs.

Measures have been taken for the prevention of malaria by the circulation of leaflets, the free distribution of quinine, and lectures and demonstrations to the public through the officers of the medical department and the headmen. In connexion with the King Edward VII. Memorial Fund measures are being taken to combat the ravages of tuberculosis. Vaccination is systematically carried on throughout the island by a special staff. During the year 161,979 subjects were vaccinated. The percentage of successful primary vaccination cases to total inspected was 90·39, while the percentage of successful revaccination cases was 70·95. Stringent precautions are taken under the auspices of the Plague Committee to prevent the introduction of plague, and the island has hitherto been immune from the ravages of the disease.

New hospitals erected by private munificence at Veyangoda, Negombo, and Moratuwa were opened during the year. There are now 76 Goverment hospitals, in addition to the lunatic and leper asylums, equipped with modern hospital furniture and surgical appliances, the number of beds ranging from 30 to 425. The new out-patients' department of the General Hospital, Colombo, has been completed and is now in working order. In addition to the hospitals there are 418 outdoor Government dispensaries and 279 estate dispensaries supported by the planters, who get their drugs free up to a value of 50 cents per coolie per annum. The lunatic asylum is in Colombo and has 664 inmates. The leper asylum is situated about six miles from Colombo and contains 392 patients. A smaller establishment in the Eastern Province contains 36 patients; a large leper settlement is to be founded there shortly. In association with Government a home for incurables (containing 80 beds) is worked by a committee of officials and representatives of the public. There are no poorhouses in Ceylon. In Colombo and some other towns there are Friend-in-need Societies for the relief of distress, and these are subsidised by Government. In addition to this every Government agent and assistant Government agent has an annual vote for "allowances to paupers."

The Medical College accommodated 151 medical and 81 apothecary students. The full course of training for medical students is five years. A diploma in medicine, surgery, and midwifery (which can be registered in the United Kingdom) is granted to successful students. In association with the College are a bacteriological institute with a small clinic for tropical medicine attached; a laboratory for the Government analyst; an ophthalmic hospital; a lying-in home; a women's hospital; a children's hospital; and special hospitals for the insane, lepers, and infectious diseases.

The staff of the Civil Medical Department has recently been strengthened by the appointment of two itinerating inspecting medical officers, whose principal duties are—(*a*) inspection of hospitals and dispensaries and of the work of the provincial surgeons generally; (*b*) inspections of opium depôts; (*c*) initiation and execution of measures to combat ankylostomiasis, tuberculosis, and malaria; (*d*) inspection of estates; and (*e*) special supervision of cholera, small-pox, or other epidemics.

A new Opium Ordinance passed by the Legislative Council relaxes the strictness of certain provisions of a former Ordinance on the same subject. Provincial surgeons are given the power by endorsement on prescriptions to exempt the person in whose name the prescription is made out from the restrictions imposed by the Ordinance. Provision is also made to enable planters out of the range of dispensaries to supply opium in a medicinal form to their coolies in emergencies under proper regulations.

The climate of Ceylon varies considerably in different parts of the island, both as regards temperature and rainfall. In the lower country and coast districts the climate is tropical, and a noticeable feature is the small diurnal variation of both the barometer and thermometer. In the mountainous districts in the interior it resembles that experienced in many parts of Europe, being temperate and equable. The rainfall for the year was below normal on the west side of the island, but above it on the east. Ratnapura again headed the list with 148·77 inches on 224 days; at the other extreme Puttalam had 37·64 inches on 87 days. The mean temperature for the whole year was highest at Mannar, 83·1° F., and lowest at Nuwara Eliya, 59·6°. At the Colombo Observatory and at Kandy the mean temperature was 81·6° and 76·0° respectively. The highest temperature reached was 101·1° on May 21st at Trincomalee. The highest on record is 103·7° at Trincomalee on May 12th, 1890. The mean daily range of temperature—i.e., the mean of the daily differences between the maximum and minimum temperatures—was highest at Budulla, where it was 19·9° and lowest at Galle, 8·4°.

A MODEL AMBULANCE SERVICE.

THE ambulance department organised in the early part of 1911 in the city of São Paulo, Brazil, is described in the annual report of the Acting British Consul, Mr. C. W. Miller, who commends it as an example to many of the great European cities. As an illustration of the methods employed, he mentions that at the corners of all main thoroughfares in the city, and also in the suburbs at convenient points, there exist a series of telephones controlled by the constabulary on duty, and in the case of an accident of any description within the limits of the capital the ambulance and doctors are in attendance in less than ten minutes after its occurrence. There are special rules and regulations governing street traffic of every description to enable the ambulances to proceed on their way to the scene of an accident without interruption or delay. Each ambulance carries an alarm signal of an easily distinguishable nature, and which can be heard for a great distance. This signal is one which other vehicles may not carry. Heavy penalties are imposed on any who impede the passage of the ambulance. Medical attendance is abundant and competent in this service, and the whole staff of the ambulance corps are to be commended for the way in which it is maintained. The city has a population of about 420,000.

THE PREVALENCE OF RED HAIR.

To the Editor of THE LANCET.

SIR,—As a Londoner I have been much struck by the relatively large numbers of red-haired children and young people met with in and about London. I have observed this for the last six months or more. There is, in my opinion, an increase in the incidence of red hair. I should like to know if others have noticed this. It is a point that might interest our anthropologists.

I am, Sir, yours faithfully,

Devonshire-place, W., July 18th, 1913. GEORGE PERNET, M.D.

GERMAN SOUTH-WEST AFRICA.

A REPORT on this German protectorate by the British Consul states that the number of white persons in the territory at the Census of 1912 was 14,816, including 204 British subjects. The native population totalled 81,949, exclusive of coloured labourers from abroad and also of from 120,000 to 150,000 natives belonging to various tribes in Ovamboland and Caprivi Zipfel. The death-rate of the white population was, roughly speaking, 11 per 1000. This low death-rate flatters the country somewhat unduly. Most of the inhabitants are persons in the prime of life, and, as a rule, those who suffer from disease which disables them from earning their living leave the country if there is little prospect of recovery. Amongst natives scurvy is rife during the dry seasons of the year. Some of the large employers of labour have managed to reduce the occurrence of this disease among their workpeople by paying attention to their diet. Pulmonary complaints are common. Tuberculosis is spreading. Venereal diseases are also on the increase, in spite of the efforts of the Government. Hospital accommodation for Europeans shows steady improvement, but the accommodation for natives outside Windhuk (the capital) is far from satisfactory. The arrangements made by the mining companies for the treatment of all employees are, on the whole, excellent.

Speculator.—We do not wholly like the proposal.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—Out-patient Demonstrations:—10 A.M. Dr. Singer: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.——2.15 P.M., Mr. W. Turner: Surgery. 3 P.M., Mr. W. Turner: Operations. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.15 P.M., Mr. R. Lake: Ear and Throat.

TUESDAY.—Out-patient Demonstrations:—10 A.M., Dr. G. Holmes: Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.——2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Mr. R. Carling: Surgery. 3.15 P.M., Dr. G. Rankin: Medicine.

WEDNESDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. C. Rowntree: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.——2 P.M., Mr. L. V. Cargill or Mr. Choyce: Operations. Dr. A. Davies: Pathological Demonstration. 2.15 P.M., Dr. F. Taylor: Medicine. 3.15 P.M., Mr. Cargill: Eye Clinique. 4.30 P.M., Mr. C. C. Choyce: Surgery.

THURSDAY.—Out-patient Demonstrations:—10 A.M., Dr. Singer: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.——2 P.M., Mr. R. Carling or Mr. W. Turner: Operations. 3.15 P.M., Dr. R. Wells: Medicine.

FRIDAY.—Out-patient Demonstrations;—10 A.M., Dr. G. Holmes: Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.——2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Sir John Rose Bradford; Medicine. 3.15 P.M., Mr. L. McGavin: Surgery.

SATURDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. C. Rowntree: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.——10 A.M., Col. Barry: Radiography.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

ROTUNDA HOSPITAL POST-GRADUATE COURSES, Dublin.

MONDAY.—10 A.M., Obstetrical Lecture: The Hæmorrhages of Pregnancy—Accidental Hæmorrhage. 11 A.M., Examination of Patients and Minor Operations.

TUESDAY.—10 A.M., Major Operations. 4 P.M., Class in Gynæcological Diagnosis.

WEDNESDAY.—10 A.M., Obstetrical Lecture: The Hæmorrhages of Pregnancy—Placenta Prævia. 11 A.M., Examination of Patients and Minor Operations.

THURSDAY.—10 A.M., Major Operations.

FRIDAY.—10 A.M., Gynæcological Lecture: Pelvic Tumours. 11 A.M., Examination of Patients and Minor Operations. 4 P.M., Class in Gynæcological Diagnosis.

For further particulars of the above Lectures, &c., see Advertiseme Pages.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced:—

April 26th–Nov. 5th (Ghent).—International Exhibition.
May 31st to October (London, Earl's Court).—Imperial Services Exhibition.
May–October (Leipzig).—First International Building Exhibition.
June–October (London, Crystal Palace).—Anglo-German Exhibition.
June 24th (opened) (London, 54a, Wigmore-street).—Historical Medical Museum. (Organised by Mr. Henry S. Wellcome.)
Aug. 1st–3rd (Ghent).—Congress against the Adulteration and Deterioration of Foodstuffs.
,, 1st–5th (Brussels).—Third International Conference on Cancer.
,, 3rd–8th (London).—Sixth International Dental Congress.
,, 4th and 5th (London, Caxton Hall).—English-speaking Conference on Infant Mortality.
,, 6th–12th.—(London).—Seventeenth International Congress of Medicine.
,, 20th–26th (Ghent).—Third International Congress of Neurology and Psychiatry.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial Staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

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Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 23rd, 1913.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
July 17	30·03	W.	0·10	109	73	55	59	60	Cloudy
,, 18	30·01	W.	...	103	68	60	60	61	Overcast
,, 19	30·09	W.	0·13	80	63	56	56	59	Overcast
,, 20	30·09	N.W.	...	114	68	53	55	60	Fine
,, 21	30·13	N.W.	0·03	100	66	50	53	58	Cloudy
,, 22	30·07	N.E.	...	109	66	56	56	56	Raining
,, 23	30·01	N.	...	65	56	53	52	56	Overcast

The following journals, magazines, &c., have been received:—British Journal of Dermatology, Journal of Tropical Medicine and Hygiene, Canadian Practitioner and Review, Parasitology, Albany Medical Annals, Bulletin of the Naval Medical Association of Japan, Yellow Fever Bulletin, New Zealand Medical Journal, Spezielle Pathologie und Therapie innerer Krankheiten, Zeitschrift für Angewandte Anatomie und Konstitutionslehre, Journal of Physiology, American Medicine, Transactions of the United Service Medical Society, American Journal of Obstetrics, Canadian Medical Association Journal, Post Graduate, South African Medical Record, London Hospital Gazette, St. Thomas's Hospital Gazette, Schmidts Jahrbücher der in- und Auslandischen Gesamten Medizin.